Indiana
Hazardous Materials Team
Qualification Program

November 2010 (Draft)

Indiana Alliance of Hazardous Materials Teams

and

Indiana Department of Homeland Security
CBRNE Section

Indiana Department of Homeland Security
Joseph E. Wainscott, Jr., Executive Director
Indiana Government Center South
302 West Washington Street, Room E208
Indianapolis, IN 46204

Instructions for Use

This survey consist of several sections. These sections are:

1. Introduction
2. Release of liability
3. Authority
4. Objective Purpose
5. Vision
6. Concept of Implementation
7. Levels of Response
8. Training Requirements
9. Instructions for Use – This section explains the AEL. **As used in this document AEL, SEL, UEL and REL are synonymous**.
10. Record Keeping Requirements as per OSHA 19190.120
11. Explanation of HazMat Team Capabilities
12. HazMat Capabilities (Activities) These are what a hazmat team as a whole should be capable of performing. These are *not* individual personnel competencies.
13. HazMat Team Typing (Explanation of Components). This section contains five areas and explains the overall objective or minimum requirements for each component. These components are:
    a. *Components* - the different *functions* a team should be able to perform
    b. *Criteria* - defines the *actions* that are needed to perform the criteria
    c. *REL* – lists the section in the AEL that the equipment to perform this function is located
    d. *Type* – this section contains three types. Each individual type is determined by your teams performance capabilities
    e. *Required Performance* – your teams performance is determined by your teams capabilities which are determined by your members level of training and equipment inventory
14. Suggested Inventory per Type. This section is where you will compare the inventory that you have on-hand to determine your level of performance (type)
15. Appendix A. Lists the Operations Level competencies that each individual team member should be a able to perform as per NFPA 472 (latest edition)
16. Appendix B. Lists the Technician Level competencies that each individual team member should be a able to perform as per NFPA 472 (latest edition)
17. Appendix C. List the questions that you need to answer for the Online Survey portion of the complete Indiana Hazardous Materials Team Qualification Program.
18. Once you have completed the online portion of the survey contact the Field Services Division of the IDHS at fieldservices@dhs.in.gov to request one of the CBRNE Sections specialists schedule a meeting with you to complete this survey. You can expect a minimum of eight (8) hours will be required to complete the on-site portion of this survey.
19. IT IS STRONGLY SUGGESTED THAT YOU PRINT THIS DOCUMENT AND REFERENCE DOCUMENTS IN THEIR ENTIRITY BEFORE ATTEMPTING TO COMPLETE THE ONLINE PROTION OF THIS SURVEY!

Table of Contents

INTRODUCTION

This Comprehensive Hazardous Materials Team Qualification Program is provided by a cooperative effort between the Indiana Department of Homeland Security IDHS), Field Services Division, Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNE) Section and the Indiana Hazardous Materials Alliance for the purpose of being used as a tool by the hazardous materials teams (HMT) in Indiana to determine equipment and training best practices. HMT's should review this Recommended Equipment List (REL) when preparing to develop equipment specifications, purchase orders, creating or updating local master hazardous materials equipment inventory lists, and for reviewing requirements for hazardous materials/WMD chemical-biological response equipment grants. The Typing section should be used to determine training requirements for *the three (3) different levels of competency*. These levels of competency are dependent upon skill and equipment capabilities.

This document has been developed to enhance the District Response Task Force concept by serving as a guideline to Indiana HMT's in developing standardized hazardous materials response throughout the state.

NOTE: It should be noted that as used in this document hazardous materials team and CBRNE team are synonymous. It is understood that hazardous materials team routinely respond to incidents involving Weapons of Mass Destruction (WMD).

RELEASE OF LIABILITY

The IDHS, Field Services Division, CBRNE Section, the Indiana Hazardous Materials Alliance and the authors of this REL do not assume any liability for the performance of any equipment item mentioned in the REL. Nor is any approval or endorsement of a specific equipment item or tool to be assumed by mention of a model number, brand name, or manufacturer as provided in example notations. These example notations are included in the main body of the equipment list for clarification and comparison purposes only. However, this REL will describe a minimum level of performance for each equipment item or tool category, in an attempt to establish a minimum level of standardization. The user of this document is solely responsible for the specific selection and purchase of items to be added to their agency's inventory. Therefore, this REL is a reference document only, and should be used as a guide in an attempt to meet the minimum level of standardization.

AUTHORITY

This REL is a publication of the IDHS, Field Services Division, CBRNE Section and the Indiana Hazardous Materials Alliance. This edition of the REL becomes effective upon the date of publication, and remains in effect until superseded by the publication of the next updated edition.

OBJECTIVE

The overall objective of this REL is to establish an IDHS, Field Services Division, CBRNE Section and an Indiana Hazardous Materials Alliance reference document, and to promote better interoperability and standardization between all Hazardous Materials Teams in the State of Indiana. Adoption and implementation of this REL by emergency response HMT's will insure increased efficiency and incident intervention in the course of hazardous materials response and mutual aid.

PURPOSE

The purpose of this REL is to:

a. Provide and establish a uniform hazardous materials equipment list:
Establish an all-encompassing list of equipment that has been found to be consistent with and often utilized by hazardous materials response teams. The listing of equipment items included in this list is predicated upon the evolution of hazardous materials response intervention, and the history of popularity, utility, and need as demonstrated by the maintenance of local agency inventories. This master list would serve as the basis for a sourcing document.

b. Establish standardized equipment and tool response categories and criteria:
Create a standardized set of "Categories" and "Sub-Categories". Equipment will be listed within these categories and sub-categories based upon their function. The function shall be described in a criteria paragraph that will accompany each category and sub-category.

c. Adopt standardized equipment and tool performance descriptions:
Each individual equipment item shall be briefly described in terms of a short use or performance statement. In many cases the description will also include example sizes or nominal dimensions.

d. Support Hazardous Materials Team Typing equipment needs:
Consistent with the IDHS, Field Services Division, CBRNE Section and an Indiana Hazardous Materials Alliance*, Hazardous Materials Team Types and Minimum Standards* chart, this list will identify and establish the recommended minimum threshold equipment items needed to meet any one of the three types of hazardous materials teams. This list would also identify other hazardous materials equipment items that could be considered to be included in a local agency's inventory.

e. Promote use and adherence to industry accepted performance standards:
This list, where appropriate, shall identify various performance and regulatory standards to which the user (agency having jurisdiction, i.e. the employer and the employee) must

comply, as well as those standards that provide a minimum level of performance of the item, tool, or piece of equipment (i.e. the manufacturer).

VISION

The development and adoption of this REL shall represent the establishment of a standard of care and best practices document. It shall further represent a *minimum* recommended inventory for each of the three **Types** of hazardous materials teams **(HazMat Type I, HazMat Type II, HazMat Type III)** as described in the Levels of Response section.

CONCEPT OF IMPLEMENTATION

This program will be implemented in three phases.

Phase 1 – Initial Assessment

Phase one will commence upon the approval of this document by the Indiana Department of Homeland Security Executive Director. Phase one will include an initial Hazardous Materials Hazard and Vulnerability Assessment and Gap Analysis. This will be done by compiling and analyzing existing documentation pertaining to Indiana Hazardous Materials vulnerabilities and capabilities. Documentation will be collected from Local Emergency Planning Committees, the Indiana Emergency Response Committee, the Indiana Hazard and Vulnerability Assessment and the existing Hazardous Materials Teams throughout the State. The IDHS Field Services Division, CBRNE Section will be responsible for compiling and creating the assessment. This assessment will establish the baseline of the status of Hazardous Materials preparedness in Indiana. This will serve as the basis for future grant proposals and identifying critical needs in support of hazardous materials programs. This phase is to be completed by December 30, 2010.

Phase 2 – Hazardous Materials Team Typing and Qualification Assessment

In this phase, Hazardous Materials Teams that volunteer to participate in the program will undergo a detailed assessment measured by this document. Teams will be typed in accordance with their capabilities and deficiencies will be identified. This assessment will identify equipment gaps, calibration needs, team program weaknesses, and training needs. These assessments will be conducted by the IDHS Field Services Division, CBRNE Section by December 30, 2011.

Phase 3 – On-Going Maintenance

This final phase will be conducted by continuing annual self-assessments to be conducted by local hazardous materials teams. The IDHS Field Services Division will conduct random quality assurance audits of teams. In this phase, local hazardous materials teams will be able to submit for competitive grants to meet the needs of their individual hazardous materials programs to IDHS. These proposals should be based on their deficiencies that are revealed in their detailed and continuing self-assessments. This phase will continue until December 30, 2013 or until this program guidance is updated.

LEVELS OF RESPONSE

As listed on the far right-hand side (top) of the REL are three columns marked **"Type I", "Type II",** and **"Type III".** These refer to each of the three types of hazardous materials teams as described in the *"Hazardous Materials Company Types, Company Typing and Minimum Standards"* chart. In review, they are as follows:

- A **"Type III"** company is one that: Is appropriately equipped and trained to handle, and can function in all categories, for all *known* industrial chemical hazards, in liquid, aerosol, powder and solid forms. They are not expected to be fully equipped to intervene and handle vapor/-gas emergencies, nor incidents involving WMD chemical and biological substances.
- A **"Type II"** company is one that: Meets all "Type III" requirements, and is appropriately equipped and trained to handle, and can function in all categories, for all *unknown* industrial chemical hazards, in liquid, aerosol, powder, solids, and vapor and gas forms. They are not expected to be fully equipped to intervene and handle incidents involving WMD chemical and biological substances.
- A **"Type I"** company is one that: Meets all "Type III" and Type II" requirements, and is appropriately equipped and trained to handle, and can function in *all* categories, for all known and unknown WMD chemical and biological substances.

Items noted as being required for each of the three hazardous materials team types represents a minimum equipment standard. Local jurisdictions may in many instances elect to exceed this minimum equipment standard. To further insure and encourage attempts at uniformity and standardization, additional equipment items are listed in this REL which are not required, and are noted as being optional**.**

Local jurisdictions may also elect to include specialized equipment not listed in this REL.

TRAINING REQUIREMENTS

It shall be noted the Indiana Hazardous Materials Alliance and the CBRNE Section of the IDHS recognizes the latest nationally adopted edition of NFPA 472 as the "Standard of Care" to be used by all hazmat teams when developing training criteria. It is further understood that the training section of the IDHS may not be using the latest edition of NFPA 472 as a training standard. This does not negate the need for hazmat teams to use the latest edition.

These training requirements are reflected in the section of this document titled ***Hazardous Materials Team Types Explanation of Components*** in the center area named Criteria. These criteria reflect competencies that each team member shall demonstrate. The right-hand column lists the performance requirements for the three levels of operational capability.

INSTRUCTIONS FOR USE

Categories:
This Standardized Equipment List is divided into thirteen (13) main equipment categories. These main categories constitute the template for the Master Table of Contents. Each main category may be further divided into one or more sub-categories. Each category (i.e. Chemical Protective Clothing) and each individual subcategory (i.e. Vapor Protective) includes a descriptive paragraph that explains and defines in more detail the specific criteria that encompasses that category and sub-category. The itemized listing of all equipment or tools is found immediately following a sub-category.

Inventory Numbering:
The listing of all appropriate individual items, tools, and equipment that follows a sub-category is given a specific and unique number. This is indicated in a column named **"Inv. #."** This number will become the unique assigned inventory number for that item within this REL. It should be noticed that the number relates to its category and to its sub-category. Therefore, by referencing a specific tool or item's REL inventory number, it will be easy to determine what category and what sub-category that tool or item falls under.

Requirement:
In the REL, there is a column marked "**Requirement**". This column is used to indicate the specific requirements that must be met for a particular item or tool (i.e., "One Kit, complete"). It will also indicate the minimum quantity that must be included in a particular Type I, II, or III company inventory (i.e., one for each assigned member). If the item is indicated as being **Required (R)** for a specific company type, it must be included in the inventory in an amount not less than that shown in this column. If the item is indicated as being **Optional (Opt)** for a specific company type, it does not need to be included in an inventory, but if the agency desires to include that item voluntarily, the minimum quantity shown should be considered. If the item is indicated as being **Not Applicable (NA),** maintaining an inventory of this item is not required in order to satisfy that level of Company Type, and therefore is not recommended. Items that are Not Applicable are highlighted on a black background.

EMPLOYER RECORDKEEPING REQUIREMENTS

The Authority Having Jurisdiction (AHJ) shall demonstrate proper recordkeeping, including written SOG's, for each of the following requirements:

ICS/NIMS Forms and Usage – 1910.120(q)(3)(i)

- ☐ The senior emergency response official responding to an emergency shall become the individual in charge of a site-specific Incident Command System (ICS)
- ☐ All emergency responders and their communications shall be coordinated and controlled through the individual in charge of the ICS assisted by the senior official present for each employer

Written Safety and Health Program - 1910.120(f) and 1910.120 Appendix C (8)

- ☐ An organizational structure
- ☐ A comprehensive work plan
- ☐ A site-specific safety and health plan which need not repeat the employer's standard operating procedures required in paragraph (b)(1)(ii)(F) of this section
- ☐ The safety and health training program
- ☐ The medical surveillance program
- ☐ The employer's standard operating procedures for safety and health; and
- ☐ Any necessary interface between general program and site specific activities
- ☐ Assess and monitor workers' health and fitness for employment in hazardous waste operations and during the course of work
- ☐ Provide emergency and other treatment as needed
- ☐ Keep accurate records for future reference
- ☐ Medical records shall be kept for 30-years from date of employment termination

Written PPE Program – 1910.120 Appendix C (5)

- ☐ PPE selection based upon site hazards,
- ☐ PPE use and limitations of the equipment,
- ☐ Work mission duration,
- ☐ PPE maintenance and storage,
- ☐ PPE decontamination and disposal,
- ☐ PPE training and proper fitting,
- ☐ PPE donning and doffing procedures,
- ☐ PPE inspection procedures prior to, during, and after use,
- ☐ Evaluation of the effectiveness of the PPE program, and
- ☐ Limitations during temperature extremes, heat stress, and other appropriate medical considerations.
- ☐ Totally Encapsulating CPC testing as per manufactures instruction
- ☐ Policy statements
- ☐ Procedures, and guidelines
- ☐ Technical data on equipment, maintenance manuals, relevant regulations, and other essential information should also be collected and maintained

Written Site Safety and Control Plans - 1910.120 Appendix C(7)

- ☐ Summary analysis of hazards on the site and a risk analysis of those hazards
- ☐ Site map or sketch
- ☐ Site work zones (clean zone, transition or decontamination zone, work or hot zone)
- ☐ Use of the buddy system
- ☐ Site communications
- ☐ Command post or command center

- ☐ Standard operating procedures and safe work practices
- ☐ Medical assistance and triage area
- ☐ Hazard monitoring plan (air contaminate monitoring, etc.)
- ☐ Decontamination procedures and area
- ☐ And any other relevant areas

Written Emergency Response Plan – 1910.120(q)(2)

- ☐ Pre-emergency planning
- ☐ Personnel roles, lines of authority, and communication
- ☐ Emergency recognition and prevention
- ☐ Safe distances and places of refuge
- ☐ Site security and control
- ☐ Evacuation routes and procedures
- ☐ Decontamination
- ☐ Emergency medical treatment and first aid
- ☐ Emergency alerting and response procedures
- ☐ Critique of response and follow-up
- ☐ PPE and emergency equipment
- ☐ Site topography, layout, and prevailing weather conditions
- ☐ Procedures for reporting incidents to local, state, and federal governmental agencies
- ☐ *The emergency response plan shall be a separate section of the Site Safety and Health Plan*

Monitoring – 1910.120(h)(1)(2)(3)

- ☐ Initial entry
- ☐ Periodic
- ☐ Written Respiratory Program – 1910.138
- ☐ Written Policy/Procedures for using skilled support personnel – 1910.120(4)
- ☐ Annual Competency Testing

HAZARDOUS MATERIALS TEAM *CAPABILITIES*

This section defines the desired ***capabilities*** for hazardous materials teams. The desired competencies for hazardous materials team members are located in the appendixes at the end of this document. *It should be noted that the listed capabilities and competencies were not determined by the Indiana Department of Homeland Security, Field Services Division, CBRNE Section and and/or the Indiana Hazardous Materials Alliance. All information contained in this document was taken from the U.S. Department of Homeland Security's Target Capabilities List, OSHA, NFPA or California's FireScope.*

Capability Definition

Weapons of Mass Destruction (WMD) and Hazardous Materials Response and Decontamination is the *capability* to assess and manage the consequences of a hazardous materials release, either accidental or as part of a terrorist attack. It includes testing and identifying all likely hazardous substances onsite; ensuring that responders have protective clothing and equipment; conducting rescue operations to remove affected victims from the hazardous environment; conducting geographical survey searches of suspected sources or contamination spreads and establishing isolation perimeters; mitigating the effects of hazardous materials, decontaminating on-site victims, responders, and equipment; coordinating off-site decontamination with relevant agencies, and notifying environmental, health, and law enforcement agencies having jurisdiction for the incident to begin implementation of their standard evidence collection and investigation procedures.

Desired Outcome

Hazardous materials release is rapidly identified and mitigated; victims exposed to the hazard are rescued, decontaminated, and treated; the impact of the release is limited; and responders and at-risk populations are effectively protected.

Hazardous Materials Team ***Capabilities***

Activity: *Develop and Maintain Plans, Procedures, Programs, and Systems*	
Critical Tasks	
Res.B2b 1.1	Develop plans, programs, agreements, and requirements for responding to hazardous material incidents
Res.B2b 1.2	Develop plans, programs, criteria, and protocols for conducting decontamination
Res.B2b 1.3.1	Pre-identify resources (personnel and equipment) to provide rapid initial size- up of hazardous materials incident
Res.B2b 1.4	Assist in developing a communications plan for hazardous materials in emergencies, related to specific hazards, health guidance, educational materials, etc.
Res.B2b 1.5	Ensure plans are in place for self-presenting contaminated victims off-site (e.g., hospitals)

Preparedness Measures	**Metrics**
WMD/HazMat Response and Decontamination plans are based on a formal assessment of risks and vulnerabilities.	Yes/No
Risk analysis is completed for potential hazmat vulnerabilities, including fixed facilities and transportation-related emergencies	Yes/No
Frequency with which Emergency Response Plan is reviewed	Every 12 months
Local Emergency Planning Commission is functional	Yes/No
Frequency with which pre-planned hazards and targets are reviewed and updated	Every 12 months
Plans for pre-identified and equipped hazmat personnel to respond to hazmat incident and provide initial rapid hazmat incident size-up within 30 minutes from notification (<2hrs if regional resource) are in place	Yes/No
Hazmat personnel are equipped and trained for weather prediction and hazard pluming	Yes/No
Redundant hazmat response teams and equipment are available (or accessible through mutual aid agreements) to provide resiliency in the event of a large-scale incident	Yes/No
WMD/HazMat plans address substance identification equipment (e.g. bases, vapors, liquids, solids, biologicals like white powder).	Yes/No
WMD/HazMat plans address personnel needs (e.g. work/rest cycles, medical, psychological, financial assistance, etc.).	Yes/No
WMD/HazMat plans address demobilization (e.g. debrief personnel, repackage equipment).	Yes/No
Jurisdiction's hazmat team(s) has current protocol to coordinate with emergency medical services (EMS) on victim care post-decontamination (identification of substance, administration of antidotes, etc.)	Yes/No
Jurisdiction's hazmat team(s) has current protocol to coordinate with law enforcement for evidence collection and crime scene control	Yes/No
Emergency response and command vehicles and Incident Command Posts are equipped with Emergency Response Guidebook, NIOSH pocket guidebook, and discipline-related references relevant to the region	Yes/No

Activity: *Develop and Maintain Training and Exercise Programs*	
Critical Tasks	
Res.B2b 2.1.1	Develop and implement training related to detection and reporting of hazardous material
Res.B2b 2.1.2	Provide appropriate hazmat response training to field staff and managers of State/local programs having involvement in hazmat response
ResB2b 2.2	Develop and implement exercise programs for WMD/hazardous materials response and decontamination

Preparedness Measures	**Metric**
Percent of police, fire, EMS , first responders (other than those assigned to hazmat responses) that are trained to hazmat awareness level	100%
Percent of first responders assigned to hazmat operations that are trained to hazmat operations level (in accordance with 1910.120 (g) or NFPA 472)	100%
Percent of personnel assigned to hazmat technician responsibilities who are trained to the hazmat technician level (in accordance with 1910.120 (g) or NFPA 472)	100%
Percent of personnel assigned to hazmat specialist responsibilities who are trained to the hazmat specialist level (in accordance with 1910.120 (g) or NFPA 472)	100%
Percent of personnel assigned to manage hazmat who are trained to hazmat management level (in accordance with 1910.120 (g), NFPA 471 and NFPA 472) for detection equipment, including flammability, toxicity, radiations, chemical warfare agents (CWAs) and biologicals	100%
Percent of personnel assigned to manage hazmat who are trained to hazmat management level (in accordance with 1910.120 (g), NFPA 471 and NFPA 472) for substance identification equipment, for bases and vapors, liquids, solids and biologicals (white powder)	100%
Hazmat personnel are equipped and trained for weather prediction and hazard pluming	Yes/No
Jurisdiction's hazmat team(s) trains regularly with EMS to ensure proper coordination of victim care post-decontamination (identification of substance, administration of antidotes, etc.)	Yes/No
Jurisdiction's hazmat team(s) trains regularly with law enforcement to ensure proper coordination for evidence collection and crime scene control	Yes/No

Activity: *Direct WMD and Hazardous Material Response and Decontamination Tactical Operations* Definition: In response to notification of WMD/hazmat event or contamination, provide management and coordination of hazmat response and decontamination	
Critical Tasks	
Res.B2b 3.1	Receive alert/activation order for WMD and Hazardous Materials Response and Decontamination
Res.B2b 3.2	Establish and implement on-scene management for hazmat material response
Res.B2b 3.2.4	Provide a hazmat technical expertise team for emergency operations for both industry and public
Res.B2b 3.4.7	Implement a hazmat response (e.g., implement plans, programs, agreements, and requirements)
Res.B2b 3.2.7	Coordinate technical, administrative support, personnel, facilities, communications, and information
Res.B2b 3.2.6.2	Provide required Personal Protection Equipment to WMD/hazmat responders in coordination with safety officer
Res.B2b 3.2.5.4	Develop a site safety plan
Res.B2b 3.2.6.1	Observe the scene and review/evaluate hazard and response information as it pertains to the safety of all persons on the scene and responding
Res.B2b 3.2.6	Coordinate with safety officer to ensure the safety of on-scene WMD/hazmat responders
Res.B2b 3.4.7	Coordinate and support decontamination activities on-site
Res.B2b 3.4.7.4	Coordinate with and provide technical guidance to entities performing off-site decontamination
Res.B2b 3.4.7.5	Coordinate with hospitals to develop plans for managing/decontaminating self-presenting contaminated victims
Res.B2b 3.2.8	Coordinate resource management of hazmat equipment, supplies, and personnel
Res.B2b 3.4.7.6	Request decontamination technical assistance resources
Res.B2b 3.2.6.3	Coordinate with safety officer to brief hazmat branch/group personnel on-site-specific occupational safety and health issues involving hazmat/WMD releases
Res.B2b 3.4.7.7	Issue instructions for self-decontamination, where appropriate, expedient and possible

Performance Measures	Metric
Number of loss-time injuries (per deployment) of WMD/hazmat Response and Decontamination personnel during rescue efforts	<1
Time in which tactical plan is developed, based on the incident action plan (IAP), and for implementation by the State, region, and/or local WMD/hazmat Response and Decontamination	Within 2 hours from arrival on scene

Activity: *Activate WMD and Hazardous Material Response and Decontamination* **Definition: In response to activation, mobilize and arrive at the incident scene to begin operations.**	
Critical Tasks	
Res.B2b 4.1	Initiate WMD/hazmat procedures
Res.B2b 4.2	Assemble personnel and equipment at designated location
Res.B2b 4.3	Transport team (personnel and equipment) to scene
Res.B2b 4.3.1	Conduct initial approach and positioning of responders
Res.B2b 4.3.2	Implement/integrate WMD/hazmat resources into ICS organization
Res.B2b 3.2.5.5	Initiate initial public protective actions (PPA)

Performance Measures	**Metric**
Team is coordinated/incorporated into ICS upon arrival	Yes/No
Time in which initial hazmat size-up is completed	Within 30 minutes from notification of incident
Time in which regional assets (e.g., Type I hazmat Team or Type III or IV Incident Management team) arrive on scene, if requested by IC	Within 2 hours from asset request
Time in which State assets (e.g., Type I hazmat Team or Type II or III Incident Management team) arrive on scene, if requested by IC	Within 12 hours from asset request
Time in which Federal assets (e.g., Type I hazmat Team or Type I or II Incident Management team) arrive on scene, if requested by IC	Within 24 hours from asset request
Time in which Radiological Emergency Preparedness Program (REPP) Response Teams appropriate for the incident size involving a radiological hazard are deployed	Within 24 hours from asset request
Time in which Radiological Assistance Program (RAP) Teams are deployed	Within 2 hours from asset request

Activity: *Identify the Hazard* **Definition: Upon arriving on scene, begin to assess site, sample, identify, and characterize WMD/hazmat and contamination situation, conduct hazard analysis to determine potential consequence and risk, develop plans for safety and hazmat/decontamination operations, and set up hazmat zones.**	
Critical Tasks	
Res.B2b 5.1.1	Notify law enforcement for guidance on collection and management of evidence from potential crime scenes
Res.B2b 5.1	Initiate hazmat response
Res.B2b 5.2	Survey the incident scene
Res.B2b 5.2.1	Identify hazmat and the extent/scope of the incident
Res.B2b 5.5.3	Analyze weather forecast to conduct hazard zone prediction
Res.B2b 5.2.2	Conduct contamination surveys
Res.B2b 5.2.3	Assess hazmat release situation
Res.B2b 5.2.3.1	Conduct oil and hazmat assessment
Res.B2b 5.5.2	Monitor movement of hazardous releases and formulate predictions on dispersion and characteristics over time
Res.B2b 5.5	Characterize consequences and risk
Res.B2b 5.3	Identify and establish perimeter and hazmat zones (hot, warm, cold)
Res.B2b 5.4	Conduct ongoing assessments and predictions
Performance Measures	
Time in which area is isolated and public access is controlled	Within 15 minutes from arrival on scene
Time in which hazardous materials or category involved are identified	Within 30 minutes from arrival on scene

Activity: *Assess Hazard and Evaluate Risk* **Definition: Assess the hazards present, evaluate the level of risk to both responders and the public, and develop and Incident Action Plan (IAP) to address the response problem**	
Critical Tasks	
Res.B2b 5.5.1	Collect, prioritize, and manage data and information from all sources
Res.B2b 5.5.1.1	Develop incident monitoring and sampling strategy based upon a realistic assessment of operational hazards
Res.B2b 5.5.1.2	Conduct sampling operations
Res.B2b 5.5.1.3	Identify, classify, and verify suspected non-biological WMD/hazmat samples through the use of at least two (preferably three) different instrument technologies
Res.B2b 5.5.2	Use plume dispersion models and other analytical tools to generate ongoing WMD/hazmat dispersion assessments
Res.B2b 5.5	Implement risk evaluation process that adequately addresses the risk of various actions to both responders and the public
Res.B2b 3.2.5.1	Develop and implement an Incident Action Plan (IAP) specific to WMD/hazmat issues based upon the risk evaluation process
Res.B2b 5.3	Establish and identify visually an isolation perimeter (outer perimeter) to isolate the area and deny entry
Res.B2b 5.3.1	Establish a hot zone (inner perimeter) to identify high hazard area(s) where responders will operate
Res.B2b 5.3.2	Establish other hazard control zones, based upon scope and nature of the event
Res.B2b 5.3.3	Make offensive or defensive reconnaissance operations, as necessary, to gather intelligence on the situation
Res.B2b 5.4	Conduct ongoing assessments and predictions

Performance Measures	Metric
Time in which preliminary estimate of number of victims exposed to toxic/hazardous material and source identification is obtained	Within 2 hours from arrival on scene
Time in which the at-risk population is identified and protective action recommendations are made	Within 1 hour from arrival on scene
Time in which the WMD/hazmat elements of the overall IAP are developed	Within 1 hour from arrival on scene

Activity*: Conduct Rescue Operations* **Definition: Once on-scene and equipped with protective and response equipment, implement rescue operations.**	
Critical Tasks	
Res.B2b 6.1	Determine the nature and priority of rescue operations and the numbers involved
Res.B2b 6.1.1	Identify personnel and equipment requirements to initiate rescue operations
Res.B2b 6.2	Implement safe and effective tactics to accomplish rescue operation objectives
Res.B2b 6.2.1	Extricate and rescue victims within the hot zone
Res.B2b 6.2.2	Coordinate rescue efforts with law enforcement to ensure safety of rescuers
Res.B2b 6.3	Implement secondary public protective actions (PPAs)
Res.B2b 6.3.1	Identify personnel and equipment requirements to initiate product/agent control operations
Res.B2b 6.3.2	Implement safe and effective tactics to accomplish product/agent control objectives
Res.B2b 6.3.3	Implement safe and effective tactics to support product/agent control objectives
Performance Measures	**Metric**
Time in which contaminated victims are rescued from contaminated area	Within 2 hours from arrival on scene

Activity: *Conduct Mitigation Activities* **Definition: Once on scene and equipped with protective and response equipment, implement operations plan to minimize contamination.**	
Critical Tasks	
Res.B2b 7.1.3	Identify appropriate PPE based on suspected hazardous material
Res.B2b 7.1.1	Coordinate with safety officer to monitor responders for exposure to hazmat
Res.B2b 7.1.2	Coordinate with safety officer to monitor and control the operating time of rescuers assigned to the hot zone to minimize rescuer exposure
Res.B2b 7.1	Secure the contamination source and affected areas
Res.B2b 7.2	Monitor and track compliance with containment requirements
Performance Measures	**Metric**
Time in which implementation of initial action plan and objectives is initiated	Within 4 hours from arrival on scene
Time in which hazmat/WMD contamination is contained	Within 12 hours from arrival on scene

Activity: *Conduct Decontamination and Clean-up /Recovery Operations* **Definition: Upon arrival on scene and with the requisite equipment, initiate response operations to reduce the level of on-scene contamination, minimize the potential for secondary contamination beyond the incident scene, and ensure an effective transition to clean-up and recovery operations.**	
Critical Tasks	
Res.B2b 8.1	Identify assets required for decontamination activities
Res.B2b 8.2	Identify the type of contaminants, nature of response operations, and the required type/level of decontamination operations
Res.B2b 8.4.5	Implement plans, procedures, and protocols to ensure on-site individual gross decontamination of persons and household pets affected by the incident
Res.B2b 8.4.6	Provide a means to allow medical treatment facilities and shelter managers to readily identify people who have received gross decontamination
Res.B2b 8.3.1	Establish decontamination sites for victims
Res.B2b 8.4.1	Screen affected persons
Res.B2b 8.4	Implement emergency decontamination operations
Res.B2b 8.4.2	Decontaminate victims exposed to chemical, biological, radiological, nuclear, or explosive (CBRNE) materials
Res.B2b 8.4.7	Implement technical decontamination operations for injured, contaminated victims
Res.B2b 8.4.7.1	Implement technical decontamination of human remains
Res.B2b 8.4.8	Implement technical decontamination operations in support of WMD/hazmat entry and response activities
Res.B2b 8.4.9	Implement decontamination operations to address incident-specific scenarios and requirements
Res.B2b 8.4.9.1	Decontaminate pets, if resources are available
Res.B2b 8.5.1	Coordinate livestock decontamination
Res.B2b 9.2.3	Monitor clean areas within the contamination control line
Res.B2b 9.2.2	Monitor the exit points for hazmat contaminate movement outside the isolation zone
Res.B2b 9.2.4	Coordinate with environmental authorities to ensure the appropriate decontamination area clean-up and disposal of waste materials
Res.B2b 9.2	Decontaminate affected facilities and equipment used for technical decontamination
Res.B2b 9.4.1	Perform clean-up operations
Res.B2b 9.4.2	Implement hazmat disposal plan

Performance Measures	**Metric**
Victims are provided maximum amount of privacy within site and situational constraints	Yes/No
Percent of victims provided clothing, blankets, and protection from the elements as needed	100%
Time in which technical decontamination of first responders on-site is performed (depending on substance)	Within 2 hours from end of work period
Time in which technical decontamination of off-site victims (e.g., at hospitals and designated decontamination stations) is performed (depending on substance)	Within 2 hours from arrival
Time in which technical decontamination of household pets off-site (e.g., at designated decontamination stations) is performed (depending on substance)	Within 2 hours from arrival
Time in which technical decontamination of human remains is performed	Within 24 hours from end of work period
Time in which technical decontamination of facilities and equipment is performed	Within 24 hours from end of work period

Activity: *Demobilize WMD and Hazmat Response and Decontamination* Definition: Upon completion of response phase transition to recovery operations, inventory equipment, complete paperwork, pursue rehabilitation, and conduct post-event analysis (e.g., lessons learned) in accordance with incident demobilization plan.	
Critical Tasks	
Res.B2b 10.1.1	Transfer command for emergency response phase to authority having jurisdiction (AHJ) for post-emergency clean-up and recovery operations
Res.B2b 10.1.2	Work through IC/UC to ensure that incident-specific evidence collection and investigation protocols are clearly understood and communicated to all responders
Res.B2b 10.1	Inventory WMD/hazmat equipment cache and restore to service
Res.B2b 10.2	Demobilize WMD/hazmat base of operations
Res.B2b 10.3	Arrange transportation for demobilized WMD/hazmat personnel and equipment
Res.B2b 10.4.1	Implement a formal post-incident analysis process (based upon local procedures)
Res.B2b 10.4	Debrief WMD/hazmat capability personnel
Res.B2b 10.4.2	Conduct and incident critique for incident responders

Performance Measures	**Metric**
Time in which equipment cache is re-inventoried and packaged for transport	Within 12 hours from start of demobilization process
Time in which base of operations is returned to original conditions	Within 12 hours from start of demobilization process
Percent of WMD/hazmat Response and Decontamination task force debriefed	100%

Linked Capability	Relationship
On-Site Incident Management	WMD and Hazmat Response and Decontamination integrates itself into the local Incident Command/Unified Command system.
Emergency Public Safety and Security Response	WMD and Hazmat Response and Decontamination relies upon Emergency Public Safety and Security Response assistance to secure WMD/hazmat and decontamination sites, safely divert public from the area, and to provide security support for the WMD/hazmat and decontamination base of operations.
Fire Incident Response Support	WMD and Hazmat Response and Decontamination coordinates with Fire Incident Response Support to decontaminate on-site victims and coordinates with hazmat on tactics to monitor and minimize release of hazardous materials during firefighting operations.
Environmental Health	WMD and Hazmat Response and Decontamination relies upon Environmental Health to monitor environmental public safety from decontamination and other hazmat response operations.
Citizen Evacuation and Shelter-In-Place	WMD and Hazmat Response and Decontamination relies upon Citizen Evacuation assistance to help plan for and implement the protective actions recommended by the IC in consultation with the WMD/hazmat team to both protect and decontaminate evacuees.
Emergency Triage and Pre-Hospital Treatment	WMD and Hazmat Response and Decontamination relies upon Emergency Triage and Pre-Hospital Treatment to transfer care of victims that have been decontaminated from WMD/hazmat.
Fatality Management	WMD and Hazmat Response and Decontamination notifies Fatality Management of location of decontaminated remains encountered from WMD/hazmat exposure.
Laboratory Testing	WMD and Hazmat Response and Decontamination provides Laboratory and Testing with samples for testing.

Resource Elements	Components and Description
Type III Hazmat Entry Team	Per NIMS
Type II Hazmat Entry Team	Per NIMS
Type I Hazmat Entry Team (extrication)	Per NIMS, with capabilities for extrication
Type I Hazmat Entry Team (decontamination)	Per NIMS, with capabilities for decontamination
EPA Radiological Emergency Response Team (RERT)	The (RERT), based in EPA's Office of Radiation and Indoor Air and regional offices, responds to emergencies involving releases of radioactive materials by providing environmental measurement and guidance activities; monitoring, sampling, and laboratory activities; and providing State and local authorities with advice on protecting local residents from exposure to harmful radiation levels.
Federal Radiological Monitoring and Assessment Center (FRMAC)	The Department of Energy (DOE) FRMAC coordinates Federal radiological monitoring and assessment activities with those of State and local agencies.
Hazmat Information/Research Group/Team	Reference/research function performs the compiling and interpretation of technical information related to products, agents, containers, excreta and provides relevant information to the hazmat Branch Director or Group Supervisor.
Hazmat Medical Group/Team	Part of the logistics section for the provision of medical services for response personnel
Hazmat Resources Group/Team	The "resources group" technically would be within the planning section and be termed the resources unit and would reside outside of the hazmat structure. Resources on the scene would be assigned to the staging area manager.
Hazmat Liaison Officer	
Hazmat Specialists	Single resources that will be assigned as needed and defined in 29CFR1910.120

HAZARDOUS MATERIALS TEAM *TYPES* EXPLANATION OF COMPONENTS

The Criteria column explains the overall objective or minimum requirements for each component. The Performance column explains the specific level of minimum performance to be demonstrated by that type of HMT. All performance levels for the Type III HMT are the minimum standard. A Type II HMT must, in addition to the Type III level of performance, meet all Type II performances. A Type I - HMT must, in addition to the Type II and Type III level of performance, meet all Type I performances.

This section describes functions that the different types of team should be able to perform. i.e. Type I, Type II and Type III.

Component	Criteria	REL	Type	Required Performance
Field-Testing	The identification of chemical substances using a variety of sources, which may include: Printed and electronic reference resources, material safety data sheets, field testing kits, specific chemical testing kits, chemical testing strips, and data equated from detection devices and air monitoring sources that should assist in identifying associated chemical and physical properties.	1.2	III	Known Chemicals
		1.2	II	Unknown Chemicals
		1.2 and 1.5	I	Known or Suspect WMD (Chem/Bio) Substances
Air Monitoring	The use of electronic devices to detect the presence of known or unknown gases or vapors. The basics begin with the ability to provide the standard confined space readings (oxygen (%); flammable atmosphere (LEL); carbon monoxide (ppm), and hydrogen sulfide (ppm). Advanced detection and monitoring may include instruments that differentiate between two or more flammable vapors, and may directly identify by name a specific flammable or toxic vapor. Identify toxic substances and aromatic hydrocarbons, in parts-per million (ppm) readings. The employment of other instruments such as WMD (Chem / Bio) detection instruments.	2.1	III	Combustible Vapors; Oxygen %; Carbon Monoxide; Hydrogen Sulfide
		2.2 and 2.3	II	Specialty Gas Capability; Toxic vapor detection in ppm; Complex liquid hydrocarbon vapor
		2.4	I	WMD (Chem/Bio) Powder, Liquid, Vapor
Sampling	The three criteria tiers are known chemicals, unknown chemicals, and WMD (Chem / Bio) substances. Standard evidence collection protocols required for each include: Capturing and collection, containerizing and labeling, preparation for transportation, evidence collection and lab analysis.	3.1 and 3.2	III	Known Chemicals
			II	Unknown Chemicals
			I	WMD (Chem/Bio)
Radiation Monitoring / Detection	The application of devices specifically for the detection of radiation sources. This process includes: Being able to differentiate between types of radiation, interpret readings from the device, employ a field monitoring plan to conduct geographical survey search of suspect radiological source (s) or contamination spread, ability to conduct whole body hygiene survey, insure all members of survey teams are equipped with accumulative dose reading instruments (dosimeters).	4.1	III	Beta / Gamma Detection Geographical Survey Hygiene Survey Dosimetry
		4.1	II	Same as Type III
		4.2	I	Alpha / Radionuclide Detection
Protective Clothing: Ensemble	Chemical protective clothing (CPC) includes complete ensembles (suit, boots, gloves), and may incorporate various configurations (encapsulating, non-encapsulating, jumpsuit, multi-piece) depending upon the level of protection needed. Levels of protection are: Vapor Protective, Flash Fire Vapor Protective, WMD (Chem / Bio) Vapor Protective, Liquid-Splash Protective, and (Chem / Bio) Liquid Splash Protective. All levels of protection must be compliant with NFPA standards # 1991 and # 1992. Flash fire protection and (Chem / Bio)	5.2	III	Liquid Splash Protective
		5.1	II	Vapor Protective Flash Fire Vapor Protective
		5.1 and 5.2	I	WMD (Chem/Bio) Vapor Protective WMD (Chem/Bio) Liquid

	protection are options within each NFPA standard that can be added to any basic 1991 or 1992 suit.			Splash Protective
Protective Clothing: Gloves and Boots	In addition to chemical protective gloves that are part of the CPC ensemble, sufficient inventory of NFPA compliant gloves and boots must be kept for CPC ensemble replacement purposes. Additionally, a variety of specialty gloves shall be considered (Cryogenic, Ultra-High temperatures, and Radiological gloves).	6.1	III	NFPA Compliant Glove and Boot Replacement Inventory
		6.1	II	High-Temperature Protective Gloves; Cryogenic Protective Gloves
		6.1	I	Radiation Protective Gloves
Technical Reference	Access to and use of various databases, chemical substance data depositories, and other guidelines and material safety data sheets, either in print format, electronic format, stand-alone computer programs, or data available via telecommunications. This includes the interpretation of data collected from electronic devices and chemical testing procedures.	7.1; 7.2	III	Printed and Electronic
		7.3	II	Plume Air Modeling; Map Overlays
		7.1; 7.2	I	WMD (Chem/Bio)
Special Capabilities	Additional capabilities that would augment a particular level or type of company, and would provide beneficial assets utilizing specialty equipment. Significant categories that would augment functions are the inclusion of night vision capabilities, heat sensing or heat monitoring equipment, and digital photo and video		III	0
		8.1	II	Heat Sensing, Night Vision, Digital Video
		8.1	I	Digital Video
Intervention	Employment of mechanical means of intervention and control such as plugging, patching, off-loading, and tank stabilization. Environmental means such as absorption, dams, dykes and booms. Chemical means such as neutralization and encapsulation. Intermediate capabilities should include large leak intervention. Advanced capabilities should include ability to intervene and control incidents involving WMD (Chem / Bio) substances.	9.2	III	Diking, Damming, Absorption
		9.1; 9.3	II	Neutralization, Plugging, Patching; Large Leak Intervention
			I	WMD (Chem/Bio) Spill Containment
Decontamination: Primary	Each company type must be capable of providing primary decontamination for members of an entry team. Primary decontamination must be appropriate for the typing level of that team. A Type III company must be capable of providing DECON for known chemical substances for not less than liquid splash contact. Type II company must be capable of providing DECON for unknown chemical substances for not less than vapor threat contact. Type I company must be capable of providing DECON for unknown chemicals as well as WMD (Chem / Bio) liquid and vapor threat contact.	10.1 10.2	III	Known Chemicals
		10.1 10.2	II	Unknown Chemicals
			I	WMD (Chem/Bio)
Communications	Personnel utilizing chemical, vapor or liquid splash protective clothing, shall utilize and maintain communications of sufficient type and quality as to provide for safe communications between the entry team leader, members of the team, and one another. Other communication devices include: Cellular phones. Intermediate and advanced capability should include wireless transmittal for the purpose of verbal, data transfer, and imagery exchange, and access to the Internet.	11.1 11.2	III	In-Suit Comm; Cell Phone
		7.4 11.2	II	Wireless Fax, Copy, Web Access
		7.4 11.2	I	Wireless Fax, Copy, Web Access
Respiratory Protection	Self-contained breathing apparatus (SCBA) must be provided for each member of the team. To augment advanced, large scale,	12	III	SCBA

	and/or long-term intervention activities, utilization of an umbilical air system should be considered. This also can be used to augment breathing air, suit cooling, and work in confined spaces. Air purifying respirators (APR) or powered air purifying respirators (PAPR) certified by NIOSH for (Chem / Bio) threat atmospheres should be considered for advanced capabilities.	12	II	SCBA
		12.1 12.2	I	SCBA
Personnel: Training & Staffing	All personnel of a Type III company must meet the hazardous materials training requirements for Technician in NFPA 472, 2008 edition. All personnel of a Type II and Type I company must meet the training requirements for Specialist in NFPA 472, 2008 edition. All personnel of a Type I company must further be trained to WMD (Chem / Bio) equivalent in NFPA 472, 2008 edition		III	HMT (80 Hour) 5-personnel
			II	HMS (120 Hour) 5-Personnel
			I	HMS+(16 Hour) Chem/Bio Specialty 7-Personnel

HAZARDOUS MATERIALS TEAM SUGGESTED INVENTORY LEVEL PER TYPE

I.e. this section list the quantity and a description of each item that the three types of hazmat team are required to have per type. NOTE: This section is quite extensive.

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
FIELD TESTING and DETECTION					
Color Change Analysis - Non-Electronic [Sub-Category]					
1.1.1 **TEST STRIPS, pH PAPER, Packets:** To test acidity or alkalinity of aqueous solutions; ¼" wide x 3" long nominal; Presence is based upon a color change.	1 Pkt		**R**	**R**	**R**
1.1.2 **TEST TABS, pH PAPER, Kit:** Same as pH PAPER Test Strips, but extra-large, ½ to 1" wide by 6 to 9" long nominal; Presence is based upon a color change.	1 Pkt		**Opt**	**Opt**	**Opt**
1.1.3 **TEST STRIPS, OXIDIZER, Packets:** Physical or chemical property sensitive; Presence is based upon a color change.	1 Pkt		**R**	**R**	**R**
1.1.4 **TEST STRIPS, PEROXIDE, Packets:** Physical or chemical property sensitive; Presence is based upon a color change.	1 Pkt		**R**	**R**	**R**
1.1.5 **TEST STRIPS, CHEMICAL SPECIFIC, Packets:** Additional industrial chemicals test strips, usually sensitive for a specific chemical (i.e. formaldehyde; chlorinated hydrocarbons; organo-phosphate; halogen ion; heavy metals; nitrites; nitrates; cyanides, sulfites, sulfates, etc.) Presence is based upon a color change.	1 Pkt of each		**Opt**	**Opt**	**Opt**
1.1.6 **TEST STRIPS, MULTI-ION CLASSIFICATION, Kit:** Single large test strips detects for 5 or more ions or compounds simultaneously (typically is a combination of the following: corrosiveness, oxidizer, fluoride ion, halogen ions, organic solvents, sulfite, sulfide, nitrite, nitrate; potassium, lead, arsenic, organo-phosphates – depending on manufacturer); Combination can depend upon type of kit purchased). Based upon color change.	1 Kit		**Opt**	**Opt**	**Opt**
1.1.7 **TEST STRIPS, WATER QUICK TEST, Kit:** Test strip detects 5 or more common contaminants in water simultaneously (typically chlorine ion, pH, alkalinity, hardness, nitrates, nitrites). Based upon color change.	1 Kit		**Opt**	**Opt**	**Opt**
1.1.8 **TEST STRIPS, WATER QUAITY, Kit:** More advanced test kit, in addition to kit above, also tests for bacteria, ammonia, sulfates, free iron, free copper	1 Kit		**Opt**	**Opt**	**Opt**
1.1.9 **TEST STRIPS, WMD CHEMICAL, Kit:** Military grade detection papers for field testing of liquids only: (i.e. "M-8" paper booklet of 25 sheets, which are also part of the M256A1 Kit, for nerve agents GA, GB, GD, GF VX and blister agents L, H, HD). Strip turns to one of four colors. - Or -(i.e. "3-WAY" adhesive paper booklet of 12 sheets; for some nerve agents, blister agents). Strip turns to one of three colors	1 Pkt		**R**	**N/A**	**N/A**
1.1.10 **TEST PAPER, WMD CHEMICAL, Roll:** Military grade (i.e. "M-9" paper rolls, for nerve or blister agents). Presence is based upon a single color change, and does not distinguish between nerve agents and blister agents.	1 Pkt		**R**	**N/A**	**N/A**
1.1.11 **TEST PAPER, WMD CHEMICAL, Card:** Military M256A1 plastic card test kit (Twelve disposable plastic test cards are part of the M256A1 kit; for nerve [GA, GB, GD, VX], blister [H, HD, CX, L], blood [AC, CK] Presence is based upon color changes)	1 Kit		**R**	**N/A**	**N/A**

1.1.12 **TEST CARD, TRAINING ONLY, WMD CHEMICAL**: Military M256A1 Training Kit.	1 Kit		**R**	**N/A**	**N/A**
1.1.13 **TEST TICKET, NERVE AGENT ONLY, Sensor:** Applicable only for some nerve agents, color change based upon detection of organo-phosphate radicals, in air or water.	1 Package or Kit		**Opt**	**N/A**	**N/A**
1.1.14 **TEST TICKET, MUSTARD AGENT ONLY, Sensor:** Applicable only for mustard agents, color change based upon detection of chlorethyl radical, in air or water.	1 Package or Kit		**Opt**	**N/A**	**N/A**
1.1.15 **DETECTION, EXPLOSIVE SUBSTANCE, Kit:** Kit contains three aerosol cans, each to test for a specific group of explosives (A – TNT, TNB, DNT, picric acid; B – RDX, nitro, dynamite, PETN, SEMTEX; C – ANFO, black powder, nitrates, gun powder, potassium chlorate). Positive results are based upon color change.	1 Package or Kit		**Opt**	**Opt**	**N/A**
1.2 Qualitative Analysis, Kits - Non-Electronic [Sub-Category]					
1.2.1 I**NDUSTRIAL CHEMICALS, KNOWN, Qualitative: Test Kit,** Qualitative analysis, For testing and detection of known industrial chemicals	1 Kit		**N/A**	**N/A**	**R**
1.2.2 **INDUSTRIALCHEMICALS, UNKNOWN, Qualitative: Test Kit**, Qualitative analysis, For testing and detection of unknown industrial chemicals, not for biological substances. (Usually the more advanced version of the kits listed in # 1.2.1). If included in inventory, satisfies requirement for 1.2.1.	1 Kit		**R**	**R**	**Opt**
1.2.3 **PCB CHEMICALS, Test Kit:** Consists of a simple multi-step screening procedure to test for presence of poly-chlorinated biphenyl contaminated solvents. Range of detection nominally is 20 ppm to 500 ppm, with different kit versions having different ppm ranges. Detection is dependent upon liquid color change.	4 Kits		**R**	**R**	**R**
1.2.4 **CHLORINATED HYDROCARBON, Test Kit:** Consists of a simple multi-step screening procedure to test for presence of free chlorine ions in solvents. Several different kits available representing different ppm ranges, but nominally range between 200 ppm to 4,000 ppm. Detection is dependent upon liquid color change.	4 Kits	EPA 40 CFR 261	**Opt**	**Opt**	**Opt**
1.2.5 **ORGANO-PHOSPHATE, Test Kit:** Consists of a simple multi-step screening procedure to test for presence of organo-phosphate radical; Includes special test strips based on color change.	1 Kit		**Opt**	**Opt**	**Opt**
1.2.6 **INDUSTRIAL CHEMICALS, WATER CONTAMINATION, , Kit:** Qualitative analysis of domestic drinking water, and utility water supplies for contaminant industrial chemicals. Involves numerous different test procedures. Detection is dependent upon liquid color changes.	1 Kit		**Opt**	**Opt**	**Opt**

1.2.7 **INDUSTRIAL CHEMICALS, WATER SAMPLE TAKING, Kit,:** – A kit designed to support water utility company needs to gather large volume samples in preparation for analysis at their laboratories. Kits might be supplied by a local water utility company for use by the local hazmat team.	1 Kit		**Opt**	**Opt**	**Opt**
1.2.8 **WMD, WATER TEST, MILITARY, Kit:** Qualitative analysis for WMD chemicals in water (i.e. M272 or M273 kit); Sensitive for GA, GB, GD, GF, VX HD, and L to ppb and ppt. Detection is dependent upon liquid color change. **(Rev2008)**	1 Kit		**R**	**Opt**	**N/A**
1.2.9 **WMD CHEMICALS, MILITARY, Test Kit: -** Part of the M18A2 or M18A3 or CAD C-2 kit; For detecting nerve (GB, VX); blister (H, HD, HN, HT, L, CX, ED); blood (AC, CK); and choking/vomit (CG, MD). Comprises detection tickets, sampling tubes, reagent chemicals and some colorimetric tubes (i.e. M18A2, M18A3, CAD Kit C-2). **(Rev2008)**	**1 Kit**		**R**	**Opt**	**N/A**
1.2.10 **WMD CHEMICALS, MICROSCOPY, Kit:** Field portable microscope, digital camera; Requires access to internet or by telephone to a prescribed registered laboratory for transmission, and analysis of data. Complements the HazCat® type field test kit described in Sub-Category 1.2.	**1 Kit, Complete**		**Opt**	**Opt**	**N/A**
1.2.11 **WMD CHEMICALS, Reagent Test Kit:** Includes kit containing reagent chemicals, and step-by-step procedures to test and screen suspect WMD chemicals by qualitative analysis. Complements the HazCat® type field test kit described in Sub-Category 1.2.	**1 Kit, Complete**		**Opt**	**Opt**	**N/A**
1.3 Qualitative Analysis, Kits - Electronic [Sub-Category]					
1.3.1 **CHROMATOGRAPHY, GAS** – Portable chromatograph system complete within a briefcase or attaché case, self-contained computer, database, and display.	1 Complete Kit of any one of the three technologies Described, or		**R**	**R**	**Opt**
1.3.2 **SPECTROMETRY, MASS or equal** – Portable general mass spectrometry system complete within a briefcase or attaché case, self-contained computer, database, and display.					
1.3.3 **SPECTROPSCOPY, INFRA-RED**: Portable identification system including computer, color display, software, 12 volt or 120 volt; Scans unknown with infra-red light and compares fingerprint with information in a database to identify unknown; Varies between 23 lbs to 45 lbs, depending upon manufacturer.	equal or better				

1.4 Colorimetric Analysis - Non-Electronic [Sub-Category]					
1.4.1 **COLORIMETRIC Kit, BASIC** – For industrial chemicals spot analysis detection of vapors, gases.	1 Kit, Complete, of any of the three listed		**R**	**R**	**N/A**
1.4.2 **COLORIMETRIC Kit, CHIP** – Industrial chemicals spot analysis detection of vapors, gases; Miniaturized colorimetric tubes in a glass or plastic chip, often several chips to a packet. May include or require special bellows pump, electronic reader depending upon sophistication and manufacturer.					**N/A**
1.4.3 **COLORIMETRIC Kit, MULTI-SENSING** – Industrial chemicals spot analysis detection of vapors, gases; Specifically designed to read up to five (5) or more tubes simultaneously (each tube can be different), during one reading survey.					**N/A**
1.4.4 **COLORIMETRIC Kit, WMD Special** – WMD chemicals spot analysis detection of vapors, gases; Consists of specially selected industrial chemical colorimetric tubes assembled by the manufacturer with special instruction on how to employ for some WMD chemicals detection. Requires more advanced interpolation of the data derived.	1 Kit Complete		**R**	**N/A**	**N/A**
1.4.5 **COLORIMETRIC Kit, CLAN LAB** – Special kit for spot analysis detection of vapors, gases associated with clandestine drug lab chemicals. Consists of specially selected industrial chemical colorimetric tubes assembled by the manufacturer with special instructions on how to employ.	1 Kit		**Opt**	**Opt**	**N/A**
1.4.6 **PUMP, BELLOWS, Electric** – A battery powered bellows pump to augment or upgrade hand operated bellows pump; Programmable, with LCD readout.	One		**Opt**	**Opt**	**N/A**

1.5 WMD Biological Detection - Electronic					
1.5.1 **NON-AGENT SPECIFIC Biological Detection** – A samplingand detection system which will screen for presence of abiological substance based upon fluorescence technologies. Is not agent specific, only gives a "yes" or "no" that a suspect biological agent might be present with reliability of less than 50%. Confirmation and agent identification for more reliable hazard assessment requires further more advanced field testing, or samples sent in for laboratory analysis. Presence of proteins may give false positives.	1 Kit		**Opt**	**Opt**	**N/A**
1.5.2 **AGENT SPECIFIC Biological Detection** – A sampling and detection system which will verify presence of a biological substance based upon protein fluorescence, or PCR / DNA replication technologies. This system is agent specific. Devices from different manufacturers should be reviewed as each manufacturer may provide a different array of agents that can be detected. Protein fluorescence technology – (Anthrax, SEB, Plague, Tularemia, Ricin, Botulinum, Brucella) - Or - Immuno-assay fluorescence technology, - (Ricin, Botulinum, Anthrax, Small Pox) - Or - DNA replication technology, - (Anthrax, Small Pox, Tularemia, Plague)	1 Stand-Alone Kit or System, or equal or better		**R**	**Opt**	**N/A**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
AIR MONITORING					
2.1 Confined Space Monitoring [Sub-Category]					
2.1.1 **CONFINED SPACE OSHA STANDARD Four Gas**: Continuous monitoring, independent displays, built-in alarms, minimum of 10 feet of tubing and sampling wand. Referred to as "Four-in-One" Kits: (O2 Presence in Percent; Combustible Vapor in LEL; CO presence; H2S presence)	1 Unit	Intrinsically Safe to UN # 913	**R**	**R**	**R**
2.1.2 CALIBRATION KIT, for Item # 2.1.1: For each of the above that may be in inventory. (May be supplied by manufacturer as part of monitoring device kit).	1 Kit		**R**	**R**	**R**

2.2 Multiple Gas Monitoring, Toxic [Sub-Category]					
2.2.1 **TOXIC VAPOR**, in ppm: Capable of detecting combustible atmospheres (VOC – Volatile Organic Compounds) and toxic vapors (TIC – Toxic Industrial Compounds); Capable of identifying specific substances; Resistant to damage from chlorinated hydrocarbons; Data downloadable to computer. Not usually suitable for Benzene ring substances.	One Unit		**R**	**R**	**N/A**
2.2.2 **AROMATIC HYDROCARBON** (Benzene Ring) Monitoring: Device designed to detect aromatic hydrocarbon (ring) substances. If this utility is incorporated into the above device, this criteria is met.	One Unit		**R**	**R**	**N/A**
2.2.3 **SIMULTANEOUS MULTI-VAPOR** Monitoring: Can differentiate between several combustible vapors or toxic vapors. Not usually suitable for Benzene ring substances.	One Unit		**Opt**	**Opt**	**N/A**
2.2.4 **CALIBRATION KITS**: For each of the above that may be in inventory.	1 Unit for each kit		**R**	**R**	**N/A**

2.3 Specialty Gas Capability [Sub-Category]					
2.3.1 **AMMONIA**: Detects Ammonia vapors to ppm, nominal range 0 to 100 ppm.	1- Chip or Colormetric Tube		**R**	**R**	**N/A**
2.3.2 **FREONS**, Halogenated Hydrocarbons: Halogen derivative refrigerants.	1- Chip or Colormetric Tube		**R**	**R**	**N/A**
2.3.3 **HALOGEN GASES**: Specifically Chlorine; Other halogen gases optional depending upon local needs. (Rev2008)	1- Chip or Colormetric Tube		**R**	**R**	**N/A**
2.3.4 **PHOSPHINE**: Continuous Monitoring. (Rev2008)	1- Chip or Colormetric Tube		**R**	**R**	**N/A**
2.3.5 **ALDEHYDES**: Specifically Formaldehyde	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.6 **ARSINE**: Specifically Arsenic Trihydride	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.7 **CARBON DIOXIDE**: Measures to ppm, some also display ambient temperature. Requires calibration kit.	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.8 **CARBON MONIXIDE**: Measures to ppm.	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.9 **CYANIDES:** Specifically Hydrogen Cyanide, Cyanogen Chloride.	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.10 **ETHYLENE OXIDE**:	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.11 **HALOGEN ACID VAPORS**: Specifically Hydrogen Chloride	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**

2.3.12 **HYDROGEN SULFIDE**: Often is incorporated into a CGI/FID or PID instrument designed to meet OSHA Confined Space detection requirements.	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.13 **NITRIC OXIDE, NITROGEN DIOXIDE**: Nominal 0 to 100 ppm for Nitric Oxide, and nominal 0 to 10 ppm for Nitrogen Dioxide.	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.14 **SULFUR DIOXIDE**:	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.15 **VOLATILE ORGANIC COMPOUNDS (VOC's)**:	1- Chip or Colormetric Tube		**Opt**	**Opt**	**N/A**
2.3.16 **CALIBRATION KITS**: Maintenance or Calibration Kit for each of the above devices that may be in inventory, as necessary.	1 Unit		**R**	**R**	**N/A**

2.4 WMD Chemical Dedicated Instruments [Sub-Category]					
2.4.1 **NERVE AGENT** Detection: This includes GA, GB, GD, GF, VX; See Appendix D, Chart #1 for instruments.	Must have capability to monitor and detect for at least one substance in each of these six categories. This may require one to several instruments depending upon the versatility of each instrument.		**R**	**N/A**	**N/A**
2.4.2 **BLISTER AGENT** – MUSTARDS Detection: This includes H, HD, HN, See Appendix D, Chart #1 for instruments			**R**	**N/A**	**N/A**
2.4.3 **BLISTER AGENT** – LEWISITE Detection: This includes L HL; See Appendix D, Chart #1 for instruments.			**R**	**N/A**	**N/A**
2.4.4 **BLOOD AGENTS** Detection: This includes AC, HCN, CK, SA; See Appendix D, Chart #1 for instruments. Some specialty industrial detection devices are available.			**R**	**N/A**	**N/A**
2.4.5 **CHOKING / VOMITING AGENTS** Detection: This includes CG, DP, CL; See Appendix D, Chart #1 for instruments. Some specialty industrial detection devices are available for Chlorine and Hydrogen Chloride.			**R**	**N/A**	**N/A**
2.4.6 **INCAPACITATING AGENTS** Detection: Specifically Pepper Spray. See Appendix D, Chart #1 for instruments.			**R**	**N/A**	**N/A**
2.4.7 **CALIBRATION KITS**: Maintenance or Calibration Kit for each of the above devices that may be in inventory, as necessary.			**R**	**N/A**	**N/A**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
SAMPLING					
3.1 Substance Capture [Sub-Category]					
3.1.1 **BAILERS,** Hollow cylindrical tubes with a device on the top to lower or raise the bailer by a cord into a well, and a device, called a check valve, on the bottom to allow water to enter and to stay in the bailer while raising it from the well.	Must have a minimum of 6	EPA Protocol B	**R**	**R**	**R**
3.1.2 **PIPETTE, TRANSFER**, Plastic, Regular, Bulk: Disposable, plastic, nominal 5 to 8 mil capacity, 15 cm long, some available with "billows" type squeeze end.	Pkg of 100 of either type; or mix or match		**R**	**R**	**R**
3.1.3 **PIPETTE, TRANSFER**, Plastic, Large, Bulk: Disposable, plastic nominal 20 ml capacity, 30 cm long.	25		**R**	**R**	**R**
3.1.4 **PIPETTER SAFETY BULB**: Rubber, with adjustable suction valve, re-useable, replacement	1		**Opt**	**Opt**	**Opt**
3.1.5 **PIPETTE, TRANSFER**, Plunger Style: Polypropylene, capable of sucking or expelling 1 to 12 ml via action of push pull plunger with rubber gasket, graduated markings in 1.0 ml increments, disposable	Pkg 10		**Opt**	**Opt**	**Opt**
3.1.6 **FIBERGLASS CLOTH**: Cloth of woven fiberglass thread, pliable, for surface swipe samples of contamination; Maintained in EPA sterile 8 oz. jar.	1 sq ft		**R**	**R**	**R**
3.1.7 **SPONGE,** Sealed, Sterile: For surface swipe sample taking.	2		**R**	**R**	**R**
3.1.8 **DRUM SAMPLER**: Nominal 43" long plastic handle, with screw-on borosilicate glass bottle of nominal 125 ml capacity, to sample 55 gallon drums or small stationary tanks.	1		**Opt**	**Opt**	**Opt**
3.1.9 **TANKER SAMPLER**: Same as previous item but with extension or telescopic handle to nominal 8 feet.	1		**Opt**	**Opt**	**Opt**
3.1.10 **ENVIRONMENT DIPPER**, Telescopic: For grabbing samples in tankers, large tanks, creeks, canals; Usually polyethylene extendable or telescopic handle to nominal 8 – 24 feet, with slip-on 500 ml plastic cup, or 500 ml swivel ladle.	1		**R**	**R**	**R**
3.1.11 **TONGS, BEAKER or CRUCIBLE**, Metal, PTFE Coated: Chemical resistant stainless steel with tips coated with PTFE, nominal 9 ½" long.	2 - Two of either type, or one of each		**R**	**R**	**R**
3.1.12 **TONGS, BEAKER or CRUCIBLE**, Metal, Plastic Coated: Chemical resistant stainless steel with tips coated with plastic for handling jars, beakers; nominal 10" long.					
3.1.13 **TONGS, BEAKER or CRUCIBLE**, Metal, Extra-Long: Chemical resistant stainless steel or nickel plated, nominal 18" long.	1		**Opt**	**Opt**	**Opt**
3.1.14 **FORCEPS:** Steel, Teflon coated or uncoated, or Plastic polypropylene, Nominal length 3 ¾" to 5 ½", with pointed or round tips.	At least two of any kind		**R**	**R**	**R**
3.1.15 **FUNNEL:** Plastic, Glass or Metal (disposable or reuseable): Small - nominal opening measurement 1 ½" to 2" diameter; Medium - nominal opening measurement 2 ½" to 3 ½"; Large - nominal opening measurement 4" to 6" diameter.	Complement of 3, **with at least 1 of each size** (Rev 2009)		**R**	**R**	**R**

3.1.16 **SPATULA, SAMPLING, LARGE,** "V" Shape: Plastic or metal, nominal 6" to 11" long x ¾" wide, nominal capacity 15 cc to 36cc.	Total of 5 in any combination		**R**	**R**	**R**
3.1.17 **SCOOP, SMALL**, Sterile, 2 oz: General purpose polystyrene, nominal 2 ¼" x 4"	1		**R**	**R**	**R**
3.1.18 **SCOOP, MEDIUM**, Sterile, 4 oz: General purpose polystyrene, nominal 3" x 5"	1		**Opt**	**Opt**	**Opt**
3.1.19 **SCOOP, LARGE**, Sterile, 8 oz: General purpose polystyrene, nominal 4" x 6 ½"	1		**Opt**	**Opt**	**Opt**
3.1.20 **SCOOP, SMALL**, Stainless Steel: Nominal bowl size 5" x 2 ½".	1		**Opt**	**Opt**	**Opt**
3.2 Bulk Liquid Transfer – Mechanical [Sub-Category]					
3.2.1 **PUMP, SYPHON, DRUM**, Heavy Duty, Stainless Steel: For 55 gallon drums; All 316 stainless steel with Teflon piston; Hose 35 to 55 feet length; Rate 16 oz. per stroke nominal.	1 of any of these three pumps listed	FM or UL Listed	**R**	**R**	**R**
3.2.2 **PUMP, SYPHON, DRUM**, Heavy Duty, High Quality: For 55 gallon drums; PVC construction with Viton gaskets and valves; Polyethylene hose 35 to 55 feet length; Rate 1.3 pints per stroke nominal.		FM or UL Listed	**Opt**	**Opt**	**Opt**
3.2.3 **PUMP, ROTARY**, Transfer, Metal: Suitable for flammable liquids in 55 gallon drums; Cast iron housing, rubber "O" rings (Viton is recommended for solvents); Aluminum pick-up tube, flame arresting screen and baffle, vacuum breaker, and bung adaptor; Transfers nominal 8 – 10 gallons with 100 revolutions.		FM or UL Listed	**Opt**	**Opt**	**Opt**
3.2.4 **PUMP, SYPHON, DRUM**, Plastic, Medium Duty: For 55 gallon drums; Polyethylene or better, hose 36" minimum; For use with solvents and some inorganic acids; Fits 2" NPT bung hole of drums; Nominal 7 GPM.	1		**Opt**	**Opt**	**Opt**
3.2.5 **PUMP, SYPHON, DRUM**, Plastic, Light Duty: For 55 gallon drums; Polyethylene or better, hose 36" minimum; For use with solvents and some inorganic acids; Fits 2" NPT bung hole of drums; Nominal 5 GPM.	1		**Opt**	**Opt**	**Opt**
3.2.6 **PUMP, ROTARY**, Transfer, Plastic: Suitable for solvents and corrosive liquids in 55 gallon drums; Polypropylene housing, Uses Teflon "O" rings; Transfers nominal 8 – 10 gallons per minute.	1		**Opt**	**Opt**	**Opt**
3.2.7 **PUMP, DIAPHRAGM, HAND**: Portable hand pump with handle, push-pull diaphragm; Available with screw or QC snap-tight 1 ½" hose connections (2), with nitrile strainer on inlet side; 10' of 1 ½" inlet hose and 20' 1 ½" discharge hose; Unit mountable on sturdy platform; Nominal 15 GPM. Often is included as part of a tool inventory in support of decontamination processes.	1		R	R	R
3.2.8 **STINGER, SUCTION PROBE**: Usually an "in-house" fabricated aluminum pipe of nominal 4" dia. and 12' long, to assist in transfer of flammable liquid product from an overturned tanker truck; Requires drill, proper size metal cutting 4" dia. drill bit, suction or mechanical pump.	1		**Opt**	**Opt**	**Opt**

3.3 Containerization, Labeling, Documentation [Sub-Category]					
3.3.1 **SAMPLE JARS**, Sterile, Clear Glass, 16 oz: Short, EPA Class 2000, wide mouth with Teflon lined lids	6	Class 2000 EPA Protocol B	**Opt**	**Opt**	**Opt**
3.3.2 **SAMPLE JARS**, Sterile, Clear Glass, 8 & 4 oz: Short, EPA Class 2000, wide mouth with Teflon lined lids	Compliment of 12	Class 2000 EPA Protocol B	**R**	**R**	**R**
3.3.3 **SAMPLE JARS**, Sterile, Amber Glass, 16 oz, EPA Class 2000, wide mouth with Teflon lined lids	2	Class 2000 EPA Protocol B	**Opt**	**Opt**	**Opt**
3.3.4 **SAMPLE JARS**, Sterile, Amber Glass, 8 & 4 oz: EPA Class 2000, wide mouth with Teflon lined lids	Compliment of 4	Class 2000 EPA Protocol B	**R**	**R**	**R**
3.3.5 **SAMPLE JARS**, Non-Sterile, Plastic, 8 oz: Ideal for solids or powder samples, polypropylene, with wide mouth screw lids; Not recommended for solvents; Not recommended for evidence or lab analysis collection.	12		**Opt**	**Opt**	**Opt**
3.3.6 **SAMPLE JARS**, Non-Sterile, Glass, 8 oz: Ideal for corrosive liquids and solvents, glass, with wide mouth screw lids. Not recommended for evidence or lab analysis collection.	12		**Opt**	**Opt**	**Opt**
3.3.7 **SAMPLE VIALS**, Sterile, Clear Glass, 1.3 oz: Borosilicate glass vials, with closed Teflon lined cap	12	Class 2000 EPA Protocol B	**R**	**R**	**R**
3.3.8 **STOPPERS,** Conical: Rubber, neoprene, or silicone; Assortment, ranging between sizes #000 to #6 (9 sizes), (12 mm to 30 mm)	Kit of 5 different sizes		**R**	**R**	**R**
3.3.9 **BAGS, PLASTIC**, Zipper Locking: Small nominal 3” x 3”; Medium nominal 6” x 6”; Large nominal 9” x 9”; Thickness is 3 to 4 mil.	Kit of 24, representing all three sizes		**R**	**R**	**R**
3.3.10 **BAGS, EVIDENCE**, Tamper-Proof: Clear integrity evidence bags, nominal sizes are 7” x 4”, 7” x 9”, 12” x 9”, with preprinted label, tamper-proof, tear resistant, and self-sealing.	12		**R**	**R**	**R**
3.3.11 **LABELS, ORDINARY BLANK**: Nominal size to fit on sides of evidence collection jars or evidence bags; Preferably self-adhesive.	Kit of 50 of various sizes		**R**	**R**	**R**
3.3.12 **LABELS, NFPA DATA BLANK**: Nominal size is 1” x 2 ½” on vinyl, suitable for small and medium evidence bags, small vials and containers.	Kit of 12 blank	NFPA 704	**Opt**	**Opt**	**Opt**
3.3.13 **LABELS, NFPA DATA BLANK**: Nominal size is 4” x 6” on vinyl, suitable for medium and large evidence bags, large containers.	Kit of 12 blank	NFPA 704	**Opt**	**Opt**	**Opt**
3.3.14 **LABELS, NFPA LABEL ROLL**: Nominal size of each label is 1 1/8” x 3 1/8” on vinyl, available in rolls of 500 or more; Suitable for small evidence bags and all glass sample jars.	1 roll	NFPA 704	**Opt**	**Opt**	**Opt**
3.3.15 **LABELS, EVIDENCE SEALS**: Tamper-proof evidence labels or tape, nominal size is 1 ¼” x 3”, may come by the roll of 250 or more; Dye protected, tampering or attempts to remove leave signs of tampering; Suitable for sealing sampling jars and evidence bags, door jams, electrical circuit switches, locks.	1 roll or a minimum of 25 labels		**R**	**R**	**R**
3.3.16 **PENS, MARKING, PAINT**: Permanent marking, broad tip of porous fiber, multiple colors usually of enamel paint; Usually requires shaking to stir up paint.	5, preferability different colors		**R**	**R**	**R**

3.3.17 **PENS, MARKING, INDELIBLE**: Medium & Fine Point; Permanent marking, Variety of colors.	Kit of 6		**R**	**R**	**R**
3.3.18 **CHAIN Of EVIDENCE FORMS**:	20		**R**	**R**	**R**
3.3.19 **PHOTO, ASSESSMENT and RECONNAISSANCE KIT**: Camera – film type or digital technology: Must provide "instant" printed images or printable from on-board computer for analysis by on-scene personnel / Incident Command conducting hazard assessment. (Rev2008)	1 kit of either type as described		**R**	**R**	**R**
3.3.20 **PHOTO, ASSESSMENT and RECONNAISSANCE KIT**, Digital: Camera (high end 4 megapixel or better) digital which provides "instant" digital images for analysis by onscene personnel / Incident Command conducting hazard assessment, and can be downloaded to computer and printed.			**Opt**	**Opt**	**N/A**

3.4 Transportation [Sub-Category]					
3.4.1 CONTAINER, BIOLOGICAL, Plastic: A complete packaging system consisting of locking screw lid and jars of various capacities (6 ml to 500 ml), reinforcing receptacle, and cardboard box, with labels and instructions; Suitable for low threat infectious, blood, and biological.	1 Complete kit	ICAO Packing #602 for Infectious Substances	**R**	**Opt**	**N/A**
3.4.2 ICE CHEST, Locking Lid: Sturdy plastic, insulated, nominal capacity 2-5 gallon, with lid that securely locks shut.	Availability to 1		**Opt**	**Opt**	**N/A**
3.4.3 CONTAINER, BIOLOGICAL, Pelican Case: Sturdy impact resistant case, for added protection of item described above; Approved for air travel; Nominal total capacity 4 liters; Ideal for high threat infectious diseases, WMD biological, and WMD chemical.	1 Case	ICAO Packing #602 for Infectious Substances	**Opt**	**Opt**	**N/A**
3.4.4 CONTAINER, D.O.T. CERTIFIED, Small: Stainless steel, with six-bolt lid, 6 ½" dia. By 10" tall, approved for air cargo, pressure tested. The 6" dia plastic containers in Item # 3.4.2 (above) fit into this supper strong cask.	1	DOT	**Opt**	**Opt**	**N/A**
3.4.5 CONTAINER, D.O.T. CERTIFIED, Large: Stainless steel, with six-bolt lid, 6 ½" dia. By 22" tall, approved for air cargo, pressure tested. Three 6" dia plastic containers in Item # 3.4.2 (above) fit into this supper strong cask.	1	DOT	**Opt**	**Opt**	**N/A**
3.4.6 CONTAINER, D.O.T. CERTIFIED, Recovery Vessel: Totally encapsulate 100 and 150# compressed gas cylinders, 250 psi. rated. Weighs 350 pounds. Requires DOT exemption certificate.	1	DOT 3A480	**Opt**	**Opt**	**N/A**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
4. RADIATION MONITORING/DETECTION					
4.1 Gamma, Beta, and Alpha Detection and Survey [Sub-Category]					
4.1.1 **SURVEY METER, GAMMA**: Capable of detecting gamma radiation (10 keV), with visual display meter 0.001 milli-Roentgen to 1 Roentgen per hour scale, and includes counts per minute/counts per second scale (0-60,000CPM). May include additional support utilities such as headphone set, interchangeable probes, computer hardware receptacle.	I Unit: "Combination" survey meter will also satisfy requirement (See Options)	European "CE" Certification is recommended	**R**	**R**	**R**
4.1.2 **SURVEY METER, BETA**: Capable of detecting beta particles (50 keV at 45% efficiency or 150 keV at 80% efficiency), with variable visual display readout in Roentgen and milli-Roentgen per hour, and includes counts per minute/counts per second scale. May include additional support utilities such as headphone set, interchangeable probes, and computer hardware receptacle.	I Unit: "Combination" survey meter will also satisfy requirement (See Options)		**R**	**R**	**R**
4.1 3 **SURVEY METER, ALPHA**: Capable of detecting alpha particles (2.5 MeV with 70% efficiency), with variable visual display readout in Roentgen and milli-Roentgen per hour, and includes counts per minute/counts per second. Can contain a built-in detector or incorporate separate attachable detector probes.	I Unit: "Combination" survey meter will also satisfy requirement (See Options)		**R**	**N/A**	**N/A**
4.1.4 **SURVEY METER, COMBINATION, GAMMA-BETA**: Will survey for both Gamma and Beta, and Includes performance of items # 4.1.1 and 4.1.2 in one unit.. If selected, one unit will satisfy requirement for both 4.1.1 and 4.1.2	1 Unit will satisfy 4.1.1 & 4.1.2 requirement		**Opt**	**Opt**	**Opt**
4.1.5 **SURVEY METER, COMBINATION, GAMMA-BETAALPHA**: Will survey for Alpha, Beta, and Gamma, and Includes performance of items # 4.1.1, 4.1.2 and 4.1.3 in one unit. If selected, one unit will satisfy requirement for 4.1.1, 4.1.2 & 4.1.3.	1 Unit will satisfy 4.1.1, 4.1.2 & 4.1.3 requirement		**Opt**	**Opt**	**Opt**
4.1.6 **POCKET METER, COMBINATION, With Alarm**: Palm-held compact meter detects alpha, beta, gamma and x-ray; Operating range 0.05 to 50 mR/hr, and CPM 0-50,000; Built-in programmable alarm to function as dosimeter warning for accumulated dose.	2 Units		**Opt**	**Opt**	**Opt**
4.1.7 **PROBE, GAMMA, EXTENSION**: Telescoping wand with Gamma detection capability, for up to 15'.	1 Wand		**Opt**	**Opt**	**Opt**

4.2 Radionuclide Detection [Sub-Category]					
4.2.1 **RADIO-NUCLIDE DETECTION**: Hand held instrument which includes either an internal or external detector, and also includes an internal memory of a radioactive nuclide library. Graphical display in counts per second, and energy corrected dose. Might be programmable for defined alarm levels. Might require docking station. May support download of stored data to computer display. Displays correct chemical name of identified radio-nuclide, classification, and nuclide size.	1		**R**	**N/A**	**N/A**

Dosimeters [Sub-Category]					
4.3.1 **DOSIMETER, DIRECT READING**: Direct reading of accumulated dose, or quantity of gamma and x-ray exposure. Requires hand-held re-charger, scale increments should be in milli-Roentgen. Good for quick, immediate, and initial emergency survey. Electronic dosimeter, with or without alarm in 4.3.3 will also satisfy this requirement.	1 for each assigned member; Electronic also satisfies, see 4.3.3	ANSI N-13.5	**R**	**R**	**R**
4.3.2 **DOSIMETER, TLD**: It is a thermoluminescent dosimeter (TLD) utilizing crystals or film to measure dose. Must be sent to licensed lab for analysis; Are re-useable, but some have a limited shelf life (6 months);	1 for each assigned member		**Opt**	**Opt**	**Opt**
4.3.3 **DOSIMETER, ELECTRONIC, Alarm**: Direct reading dosimeter with programmable limits and alarms; Functions like a pager and is worn in pocket or on belt; Battery operated, alarms when programmed accumulated dose has been recorded. Will satisfy requirement for 4.3.1.	One for each member of team		**Opt**	**Opt**	**Opt**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
5. CHEMICAL PROTECTIVE CLOTHING					
5.1 Vapor Protective [Sub-Category]					
5.1.1 **VAPOR PROTECTIVE ENSEMBLE**, **1991 Industrial Chemicals**; At least one for each assigned member, not less than 6 for a Type I Company, and 4 for a Type II Company.	6 – Type I 4 – Type II	NFPA 1991	**R**	**R**	**N/A**
5.1.2 **VAPOR PROTECTIVE**, **with 1991 Flash Fire Escape**: Includes additional NFPA 1991 Flash Fire Escape Protection Option; At least one for each assigned member (Can be same ensemble as 5.1.1 if so specified and certified)	6 – Type I 4 – Type II	NFPA 1991	**Opt**	**Opt**	**N/A**
5.1.3 **VAPOR PROTECTIV**E, with 1991 Liquid Gas Protection: Includes additional NFPA 1991 Liquid Gas Protection Option; At least one for each assigned member (Can be same ensemble as 5.1.1 if so specified and certified)	6 – Type I 4 – Type II	NFPA 1991	**Opt**	**Opt**	**N/A**
5.1.4 **VAPOR PROTECTIVE, with 1991 WMD Chemical / Biological Protection**: Includes additional NFPA 1991 WMD Chemical / Biological Protection Option; At least one for each assigned member (Can be same ensemble as 5.1.1 if WMD specified and certified. The 2005 edition of NFPA 1991 includes WMD chemicals tests. Certifying labels MUST be attached to inside of suit). (Rev2008)	Provides for WMD entry. Minimum 6 of either type of ensemble, must include gloves, boots to same certification	Provides for NFPA 1991 - OR - NFPA 1994, Class One or Class Two	**R**	**N/A**	**N/A**
5.1.5 **VAPOR PROTECTIVE, with 1994 WMD Chemical / Biological Protection:** A separate garment per NFPA 1994 Class One (pre-2005 manufacturer's date) or Class Two (post 2005 manufacturer's date) for high vapor threat protective ensemble. (This item DOES satisfy the WMD protection requirement of SEL item # 5.1.4, but DOES NOT satisfy Industrial Chemicals protection requirement of item #5.1.1. Certifying labels MUST be attached to inside of suit).	**R** NA				
5.1.6 **PRESSURE TEST KIT**: Usually supplied by garment manufacturer, includes Magnehelic gauge.	1	NFPA 1991; ASTM F-1052	**R**	**R**	**N/A**

5.2 Liquid Splash Protective [Sub-Category]					
5.2.1 **LIQUID SPLASH PROTECTIVE, NFPA 1992**; Industrial Chemicals for liquid contact and splash protection (no vapor protection), can be jumpsuit style or multi-piece ensemble depending on manufacturer design.	6 – Type I Company 4 – Type II Company Of either type	NFPA 1992	**R**	**R**	**R**
5.2.2 **LIQUID SPLASH PROTECTIVE, with NFPA 1994 Class 3 WMD Chemical / Biological Protection:** A separate NFPA 1994 Class 3 WMD Chemical / Biological Protection Ensemble which provides for liquid splash protection, and provides a lesser level of physical property protection than NFPA 1992 garment. If selected to be in inventory, meets requirement for item 5.2.1.		NFPA 1994, Class 3	**R**	**Opt**	**N/A**
5.2.3 **LIQUID SPLASH PROTECTIVE, with NFPA 1992 Flash Fire Escape Protection Option**; Same garment as above, but with flash fire option added; (Can be same ensemble as 5.2.1 if so specified and certified at time of purchase).	6 – Type I 4 – Type II	NFPA 1992	**Opt**	**Opt**	**Opt**
5.2.4 **LIQUID SPLASH PROTECTIVE, with NFPA 1992 Liquefied Gas Protection Option**; (Can be same ensemble as 5.2.1 if so specified and certified at time of purchase).	6 – Type I 4 – Type II	NFPA 1992	**Opt**	**Opt**	**Opt**

5.3 Limited Use Protective [Sub-Category]					
5.3.1 **LIMITED USE, Splash Protective**; With at least bond or sealed seams (not simple stitch or surged); Liquid tight zipper; Two for each assigned member	2 for each assigned member		**R**	**R**	**R**
5.3.2 **LIMITED USE, WMD SPLASH THREAT, NFPA 1994, Class Three**: Certified for low threat WMD liquid environments; Primarily attractive for first responder use and protection. This protection level can be combined with the particulate protection (i.e., Ensemble can be both Class Three and Four)	2 for each assigned member		**Opt**	**N/A**	**N/A**
5.3.3 **LIMITED USE, WMD PARTICULATE THREAT, NFPA 1994, Class Four**: Certified for low threat WMD particulate environments. Primarily attractive for first responder use and protection. This protection level can be combined with the liquid protection (i.e., Ensemble can be both Class Three and Four)	2 for each assigned member		**Opt**	**N/A**	**N/A**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
6. ANCILLARY PROTECTIVE EQUIPMENT					
6.1 Hand Protection [Sub-Category]					
6.1.1 **REPLACEMENT GLOVES, Vapor Protective**: Compliant to NFPA Standard 1991. Replacement glove inventory shall be ordered from and include ample supply of the manufacturer's recommended "outer" glove. Readily available generic type replacement gloves not acceptable. The "inner" glove is listed in item # 6.1.3 below. (Rev2008)	1 replacement set for each suit on hand	NFPA 1991	**R**	**R**	**Opt**
6.1.2 **REPLACEMENT GLOVES, Liquid Splash Protective**: Compliant to NFPA Standard 1992. Replacement glove inventory must include ample supply of the "outer" generic replacement gloves (Some 1992 suit ensembles are not supplied with gloves from the manufacturer). Where gloves are used as part of the protective ensemble, the manufacturer shall specify types of compliant outer gloves. When Liquid Splash-Protective ensembles are not provided with outer gloves by the manufacturer, replacement gloves must be compliant to NFPA Standard 1992. (Rev2009) The "inner" glove is listed in item # 6.1.3 below. Doubling the number of 6.1.1 replacement gloves will satisfy this requirement, and reduce the number of different types of gloves. (Rev2008)	1 replacement set for each suit on hand; Gloves for 6.1.1 will satisfy.	NFPA 1992	**R**	**R**	**R**
6.1.3 **UNDER-GLOVE: Light weight chemical resistant disposable type** glove popularly used as an under-glove or "inner" glove for the 1991 and 1992 ensembles. Also is used separately for light duty work, handling, sampling.	24 Pair		**R**	**R**	**R**
6.1.4 **HIGH TEMPERATURE Protective Glove:** Provides nominal one minute of contact protection for surface temperatures of 800 o F to 1,000 o F, and 1,000 o F to 1,300 o F. Differing heat insulating ratings versus time is dependent upon manufacturer blend of Nomex© / Kevlar© / and PBI©.	2 pair		**R**	**R**	**N/A**
6.1.5 **ULTRA-HIGH TEMPERATURE Protective Glove**: Provides nominal one minute of contact protection for surface temperatures of 1000 o F to 2,000 o F. Differing heat insulating ratings versus time is dependent upon manufacturer blend of Nomex© / Kevlar© / and PBI©. Configuration is often a mitten that fits over glove as described in 6.1.3.	2 pair		**Opt**	**Opt**	**N/A**
6.1.6 **ULTRA-COLD Protective Glove**: Gauntlet length minimum elbow; Provides nominal one minute continuous contact protection for liquids (minus) – 260 o F to (positive) + 300 o F. Often not suitable for immersion in liquid nitrogen.	2 pair		**R**	**R**	**N/A**
6.1.7 **RADIOLOGICAL Protective Glove**: Lead lined glove of butyl or nitrile rubber. Excellent for 100 % blockage of alpha and beta particles, provides limited protection for gamma radiation.	2 pair		**R**	**Opt**	**N/A**

6.2 Foot Protection [Sub-Category]					
6.2.1 **BOOTS, CHEMICAL RESISTANT**: For use with Vapor Protective or Liquid Protective garments, and originals may be supplied by garment manufacturers. Replacements for NFPA 1991 ensemble must meet NFPA Standard 1991; Replacements for NFPA 1992 ensemble must meet NFPA Standard 1992 or better; Replacements for use with NFPA 1994 ensemble must meet NFPA Standard 1994 or better. In order to reduce the number of boot sets on hand, one set of NFPA 1991 boots will satisfy requirements for both NFPA 1992 and 1994	Minimum 1 pair for each assigned member	NFPA 1991 or NFPA 1992 or NFPA 1994; and ANSI Z-41	**R**	**R**	**R**
6.2.2 **BOOTIE, OUTER PROTECTIVE**: Disposable chemical protective bootie slip-over that covers entirely a General Work Safety Boot for use in low threat level contamination environments. Not intended to take the place of nor provide protection equivalent to NFPA 1991, 1992 and 1994 CPC boots.	12 Sets		**R**	**R**	**R**

6.3 Head and Eye Protection [Sub-Category]					
6.3.1 **HELMET:** Light weight construction style helmet to provide head protection when wearing any CPC ensemble. Should include suspension system, and adjustable sizing.	1 for each assigned member	ANSI Z-89.1	**R**	**R**	**R**
6.3.2 **GOGGLES:** For use during sample taking, material testing and qualitative analysis; Wide angle wraparound to prevent frontal and side splash to eyes; Polycarbonate or better lens for impact resistance. Some available to fit over prescription glasses.	1 for each assigned member	ANSI Z-87.1	**R**	**R**	**R**

6.4 Support Systems [Sub-Category]					
6.4.1 **UNDERGARMENT, FIRE RESISTANT**: Jumpsuit style garment, one or two piece, with or without pockets, of fire resistant material (Nomex©, PBI©, Kevlar© or blend) Compliant to one of the following NFPA Standards: 2112 – "Flame Resistant Garments for Industrial Personnel" - Or - 1975 – "Station Work Uniform for Fire and Emergency Services" - Or - 1977 – "Protective Clothing for Wildland Fire Fighting"	1 for each assigned member	NFPA 2112 Or NPFA 1975 Or NFPA 1977 (Rev2008)	**R**	**R**	**R**
6.4.2 **COOLING SYSTEM, Vest**: Auxiliary vest worn to provide cooling to torso for short period of time; Different technologies available, such as dry ice, ice packs, cryogenic nitrogen.	4 complete systems		**Opt**	**Opt**	**N/A**
6.4.3 **COOLING SYSTEM, Jumpsuit**: Jumpsuit style garment usually of fire resistant material, interwoven with tubes to provide a liquid circulating medium internal body cooling; Different technologies available, such as circulating cold water, cryogenic nitrogen; May require umbilical tube to supply cooling medium to wearer.	4 complete systems		**Opt**	**Opt**	**N/A**
6.4.4 **COOLING SYSTEM, Umbilical Air**: Air from outside source (cascade system) supplied to wearer via umbilical hose system and manifold; Is also often used to augment or override breathing air apparatus. All parts from cascade supply to wearer's face piece must be of same manufacturer. SEE also Section 12.1.	4 complete systems for suit cooling	NIOSH, OSHA	**Opt**	**Opt**	**N/A**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
7. TECHNICAL REFERENCE					
7.1 Printed References, Industrial and WMD Chemicals [Sub-Category]					
7.1.1 **DATABASE TYPE, Printed**: Technical data, physical, chemical and toxicological properties (See Appendix E, Chart # 2)	3 Different references		**R**	**R**	**R**
7.1.2 **GUIDEBOOK TYPE, Printed**: Intervention, incident handling, hazard assessment. (See Appendix E, Chart # 3)	2 Different references		**R**	**R**	**R**
7.1.3 **SPECIALTY TYPE, Printed**: Special topics (i.e., rail tank car cross sections, pesticides, etc.) or specific information (i.e. incompatibility) (See Appendix E, Chart # 4)	2 Different references		**R**	**R**	**N/A**
7.1.4 **REGULATORY TYPE, Government Codes, Ordinances, Printed OR Electronic**: Includes Federal and State codes, adopted consensus standards such as NFPA 471, 472, 2112, 1975, 1977, 1991, 1992, 1994, etc. (See Appendix E, Chart # 5). (Rev2008)	1 each of: CFR 49; CFR 29; Appropriate NFPA standards		**R**	**R**	**R**
7.1.5 **REGULATORY TYPE, Response Guidelines, Printed OR Electronic**: Local, Municipal, and County Response Plans, Operational Area Response Plans, OES Hazardous Materials Incident Contingency Plan.	1 copy – Local Response Plans 1 copy – Oper. Area Resp. Plan 1 copy – OES HMICP		**R**	**R**	**R**
7.1.6 **WMD Chemical / Biological Substances; Printed**: Technical data, some guidelines, some first aid information. (See Appendix E, Chart #6)	At Least: 1 – Chemical 2 - Biological		**R**	**N/A**	**N/A**
7.2 Electronic References, Industrial and WMD Chemicals [Sub-Category]					
7.2.1 **DATABASE TYPE, Electronic**: Technical Data, physical, chemical and toxicological properties (See Appendix E, Chart # 7)	1 Program		**R**	**R**	**R**
7.2.2 **GUIDEBOOK TYPE, Electronic**: Intervention, incident handling, hazard assessment. (See Appendix E, Chart # 8)	1 Program		**R**	**R**	**R**
7.2.3 **SPECIALTY TYPE, Electronic**: Special topics (i.e. rail tank car cross sections, pesticides, etc.) or specific information (i.e. incompatibility). (See Appendix E, Chart # 9)	1 Program		**R**	**R**	**N/A**
7.2.4 **WMD Chemical / Biological Substances; Electronic**: Technical data, some guidelines, some first aid information. (See Appendix E, #10)	1 Program		**R**	**N/A**	**N/A**

7.3 Plume Air Modeling, Program Support [Sub-category]					
7.3.1 AIR MODELING, Database Software, basic platform:	1 Program		**R**	**R**	**Opt**
7.3.2 **AIR MODELING, Overlay / Plume Display Software**: Compatible with basic database program (#7.3.1 above)	1 Program		**R**	**R**	**Opt**
7.3.3 **AIR MODELING, Overlay / Mapping Software**: Compatible with basic database program (#7.3.1 above)	1 Program		**R**	**R**	**Opt**
7.3.4 **AIR MODELING, Stand-Alone**: Not compatible with any mapping system. Generates quick plumes, and prints grid or chart formats.	1 Program		**Opt**	**Opt**	**Opt**
7.3.5 **REAL TIME Data Downfeed**: Compatible with computer and air modeling software (This downfeed capability and supporting software usually comes with the particular type of weather station purchased. See Section 8.5 for weather station descriptions)	1 Capability		**Opt**	**Opt**	**N/A**

7.4 Computer, Support Hardware, Software [Sub-Category]					
7.4.1 **COMPUTER:** One (1) desktop or laptop, mounted in vehicle with battery backup, and with flexibility to accommodate noted "Requirements" for a complete system. Basic "system" for all three team types must include all peripherals as noted under "Requirement" column. Additional peripherals and programs are required for Type II and Type I teams as noted below.	Basic "system" must include: 7.4.2 – Printer capability 7.4.3 – Scan capability 7.4.4 – Duplication capability 7.4.8 – Graphics Hardware 7.4.11 – CD/DVD Drive 7.4.12 – USB Support 7.4.13 – Operating System Edition 7.4.14 – Document Processing		**R**	**R**	**R**
7.4.2 **PRINTER,** Color: Inkjet or laser or equal color print at rate of at least 10 pages per minute (black and white). This function can be combined with Scanner (item #7.4.3) and Duplication (item 7.4.4) requirements.	All teams need ability to perform all 3 functions. PRINT SCAN DUPLICATE Separate components or combination components acceptable		**R**	**R**	**R**
7.4.3 **SCAN Capability**: Ability to SCAN documents in color, and save to hard drive or peripheral (in PDF or JPG format). This function can be combined with Printer (item 7.4.2) and Duplication (item # 7.4.4) requirements.			**R**	**R**	**R**
7.4.4 **DUPLICATION Capability**: Ability to reproduce 8 ½ x 11 documents, black and white minimum. This function can be combined with Printer / Fax / Scanner.			**R**	**R**	**R**
7.4.5 **COMBINATION UNIT**: Inkjet or laser color printer / scanner / duplicator (known as "3-in-1 units" or "4-in-1" units).			**Opt**	**Opt**	**Opt**
7.4.6 **ACCESS To INTERNET, Wireless**: Hardware, connections and ports to provide ability to utilize radio or telecommunications network for computer to access the Internet, is Broadband capable, has wireless internet card or device in order to enable computer to transmit and receive email.	1 Capability		**R**	**R**	**Opt**
7.4.7 **ACCESS To INTERNET, Hard Wire**: Ability to tap into standard telephone hardwire access to the internet for computer; This may require maintaining extra modem/telephone cable suitable for and approved by telephone or cable company to be hooked up to their system(s) upon request.	1 Capability		**Opt**	**Opt**	**Opt**
7.4.8 **HARDWARE, COMPUTER, GRAPHICS**: Insure that a high quality graphics chip enhancement, or graphics board is included	1 Capability		**R**	**R**	**R**

7.4.9 **HARDWARE, COMPUTER, MODEM**: Insure that a high quality – high speed General Packet Radio Service (GPRS) modem is installed.	1 Capability		**R**	**R**	
7.4.10 **HARDWARE, Floppy Disc Drive, 2HD**:	1 Capability				
7.4.11 HARDWARE, CD-Rom or DVD drive: Numerous different formats available, unit should be multi-format capable	1 Capability		**R**	**R**	**R**
7.4.12 **HARDWARE, COMPUTER, USB Port Compatible**: Insure that proper connection is included for attachment or download of external electronic devices (i.e. thumb drives, digital cameras, etc).	1 Capability		**R**	**R**	**R**
7.4.13 **SOFTWARE, OPERATING SYSTEM**: IBM/Windows or Apple MacIntosh basic operating system platform, operating system not to be more than two versions old at any time.	1 Capability		**R**	**R**	**R**
7.4.14 **SOFTWARE, DOCUMENT PROCESSING**: a) Must have a word processing type software program that can create basic files or documents such as letters, notes, logs, tables, etc., and that can download and display other imported files such as incident command forms, Incident Action Plans, Site Safety Plans, etc. (i.e. .doc, .wpd, .rtf). b) Must have a graphics processor type software program that can download and display graphics documents such as photos, maps, plume generation overlays in a variety of graphics file formats, (including .jpg).	1 Capability		**R**	**R**	**R**
7.4.15 **SOFTWARE, FORMAT CONVERSION**: a) Ability to download, open, copy, and save files in various graphics formats (i.e. .tiff, .bmp, .wmp, etc.) and convert them to a .jpg file. b) Ability to convert any document and graphics file to a .pdf file.	1 Capability		**R**	**R**	**Opt**
7.4.16 **SOFTWARE, PROTECTION**: Installation of software and/or hardware to provide virus protection, Trojan horse protection, firewall, privacy protection, ad blocking, intrusion detection, upgrades, and removal of virus, Trojan horse, and spyware contamination.	1 Capability		**R**	**R**	**Opt**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
8. SPECIAL CAPABILITIES					
8.1 Advanced Technologies; Vision, Heat, Sound [Sub-Category]					
8.1.1 **LIGHT AMPLIFICATION, SCOPE, BASIC**; Hand-held, portable stand-alone device for diminished light environments (Night Vision); Some configurations available include: Monoculars and binoculars, usually with built-in zoom capability. Does not allow for interchangeable lenses. Item # 8.1.2 is acceptable to meet this requirement.	1 Unit	Generation II or III Technology	**R**	**R**	**Opt**
8.1.2 **LIGHT AMPLIFICATION, SCOPE, INTERCHANGEABLE, Body Only**; Hand-held, portable stand-alone device for diminished light environments (Night Vision); Usually single lens (monocular) only; Lenses are interchangeable, and usually incorporate the high quality of a variety of interchangeable 35mm camera lenses, including standard view, wide angle, telephoto, and zoom-telephoto.	1 Unit - Meets requirement for 8.1.1	Generation II or III Technology	**Opt**	**Opt**	**Opt**
8.1.3 **LIGHT AMPLIFICATION, LENSES, INTERCHANGEABLE LENSES, Wide Angle**: Interchangeable camera lens, usually in the range of 25 to 35 mm.	1 Lens		**Opt**	**Opt**	**Opt**
8.1.4 **LIGHT AMPLIFICATION, LENSES, INTERCHANGEABLE LENSES, Standard**: Interchangeable camera lens, usually in the range of 45 to 65 mm.	1 Lens		**Opt**	**Opt**	**Opt**
8.1.5 **LIGHT AMPLIFICATION, INTERCHANGEABLE LENSES, Telephoto**: Interchangeable camera lens, usually in the range of 125 to 225 mm.	1 Lens		**Opt**	**Opt**	**Opt**
8.1.6 **LIGHT AMPLIFICATION, INTERCHANGEABLE LENSES, Zoom**: Interchangeable camera lens; Popular ranges are 35 to 100 mm, 75 to 150 mm, and 100 to 250 mm.	1 Lens		**Opt**	**Opt**	**Opt**
8.1.7 **LIGHT AMPLIFICATION, CAMERA, MINIATURIZED**: Very small night-vision technology camera (approximate size i.e. ball point pen); Attachable to helmet, goggles, glasses; Transmits image back to receiving station.	1 Unit		**Opt**	**Opt**	**Opt**
8.1.8 **INFRA-RED, SCOPE, Temperature Sensing Only**: Handheld, portable scope; with L.E.D. direct temperature reading display, nominal from -25o F to + 1000o F.	1 Scope		**R**	**R**	**Opt**
8.1.9 **INFRA-RED, SCOPE, Hand-Held, Imaging**: Hand-held camera-like device, provides image of viewing area in infrared light only (not ambient visual light).	1 Scope		**Opt**	**Opt**	**Opt**
8.1.10 **INFRA-RED, SCOPE, Mountable, Imaging**: Camera-like device which provides image of viewing area in infra-red light only (not ambient visual light); Mountable to helmet and can provide image to the wearer, and/or transmit image back to a receiving station.	1 Scope		**Opt**	**Opt**	**Opt**
8.1.11 **INFRA-RED, PROBE, Imaging**: Hand-held device, with infra-red camera lens on end of probe; Probe may be extendable; Lens may be moveable or pivotal.	1 probe		**Opt**	**Opt**	**Opt**

8.1.12 **INFRA-RED, CAMERA, MINITURIZED, Imaging**: Very small infra-red vision technology camera (approximate size i.e. ball point pen); Attachable to helmet, goggles, glasses; Transmits image back to receiving station; could be for further image manipulation and re-transmission.	1 Unit		**Opt**	**Opt**	**Opt**
8.1.13 **PERSONAL IDENTIFICATION BEACON, Infra-Red**: L.E.D. Personal Identification Beacon, for night or severely diminished light survey and monitoring of entry team personnel; Flashing light is in infra-red range, is invisible to naked eye; (Requires Night Vision Scope or an Infra-Red Imaging camera to detect)	1 for each assigned member		**Opt**	**Opt**	**Opt**
8.1.14 **PERSONAL TRACKER**: A transmitter is worn by the employee; sends an ultra-sonic signal. A hand held receiver receives signal; LED readout on receiver shows strength of signal and can track through smoke, flame and debris.	1 for each assigned member		**Opt**	**Opt**	**Opt**
8.1.15 **SOUND SENSING, Ultra-Sonic**: Leak detection device for escaping gas, detecting variations in inaudible harmonic sounds; Selectable dB range down to 30 dB and selectable frequency; Nominal frequency range 15 to 100 kHz..	1 Unit		**R**	**R**	**Opt**
8.1.16 **CAMERA, VIDEO, Digital**: Portable hand-held color video camera, with laser pointer, microphone, mountable on tripod; May have built-in compass, timer.	1 Unit	UL Standard 1604	**R**	**Opt**	**Opt**
8.1.17 **CAMERA, VIDEO, PROBE, Wireless**: Portable hand-held color video camera, with telescoping probe; Wireless transmitter to receiver in CP.	1 Unit		**Opt**	**Opt**	**Opt**
8.1.18 **CAMERA, MINIATURIZED, Video Imaging**: Very small video technology camera (approximate size i.e. ball point pen); Attachable to helmet, goggles, glasses; Transmits image back to receiving station; could be for further image manipulation and re-transmission.	1 Unit		**Opt**	**Opt**	**Opt**

8.2 Advanced Technologies; Weather, GPS [Sub-Category]					
8.2.1 **WEATHER STATION, Basic Kit**: Tripod or mounting bracket, wind monitor (up to 100 mph), barometer (+ or – 3 mBars), air temperature sensor (-20 to +120 degrees F), internal compass, humidity sensor (0 to 100%); Hardwire connections allow use of vehicle or generator power, and sends data back to digital receiver and a host computer; All data upgraded nominally every second.	1 complete kit: Either one as describe will suffice		**R**	**R**	**Opt**
8.2.2 **WEATHER STATION, Wireless Digital Support**: Upgrades unit to include transmitter as part of unit, and transmits data up to 5 miles to digital receiver and host computer. Enables weather station to function either by hardwire or wireless.					
8.2.3 **WEATHER STATION, Software Support:** Sometimes included as part of basic kit, or may need to be purchased separately depending upon manufacturer; Allows for plume on-screen display, and/or allows for data to be compatible with other plume generation programs such as CAMEO, EIS, CHARM, SAFER.	1 support system		**Opt**	**Opt**	**Opt**
8.2.4 **GPS Personal Receiver/Transmitter**: A receiver-transmitter worn by the employee; sends signal to GPS receiver grid (i.e. satellites), which calculates location, and re-transmits position to a receiver station (Requires receiver station), and displayed on computer monitor.	1 for each assigned member		**Opt**	**Opt**	**Opt**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
9. INTERVENTION					
9.1 Chemical Intervention [Sub-Category]					
9.1.1 **NEUTRALIZATION – Acids**: for concentrated Acid spills of up to 5 gallons: Should be neutral salt producing and nonpolluting; Granular Sesquicarbonate recommended.	An amount sufficient to neutralize 5 gallon spill		**R**	**R**	**Opt**
9.1.2 **NEUTRALIZATION – Alkali (Bases)**: for concentrated Alkali spills, up to 5 gallons; Should be neutral salt producing and non-polluting; Powdered Citric Acid recommended.	An amount sufficient to neutralize 5 gallon spill		**R**	**R**	**Opt**
9.1.3 **ENCAPSULATING SPREADABLE POWDER – General Purpose (and suitable for Pesticides)**: Must be NON-CLAY BASED. Granular, spreadable, and pourable; Acceptable for POLAR and NON-POLAR based solvents including pesticides. Nominal size 5-10 lbs dispenser box or bag.	1 Container (Not "kitty litter" or diatomaceous earth)	OSHA 29CFR 1910.119, or EPA 40CFR170	**R**	**R**	**Opt**
9.1.4 **ENCAPSULATING SPREADABLE POWDER - Formaldehyde**: Granular spreadable / pourable, popular for formaldehyde solvents encapsulation; Nominal size – 5 gallon pail kit or 5 lbs of spreadable powder.	An amount sufficient to encapsulate a 5 gallon spill		**R**	**R**	**Opt**

9.1.5 **ENCAPSULATING SPREADABLE POWDER – Non-Polar Solvents**: Granular spreadable / pourable, suitable for hydrocarbon based solvents (not water based solvents), fuels, oil based poisons. Encapsulates and solidifies into a solid; Nominal size – 2 gallon pail.	1 Container	EPA RCRA Burial Regulations	**R**	**R**	**Opt**
9.1.6 **FIRE EXTINGUISHER, CLASS "D", Sodium Chloride formulation**: Capacity 30 Lbs; suited for metal fires of magnesium, sodium, potassium, uranium, aluminum	Must have at least ONE. Any one from these two types will satisfy.	FM Approval	**R**	**R**	**R**
9.1.7 FIRE EXTINGUISHER, CLASS "D", Copper compound R R R formulation: Capacity 30 Lbs minimum; suited for lithium, lithium alloys.		FM Approval	**R**	**R**	**R**
9.2 Environmental Intervention [Sub-Category]					
9.2.1 **ABSORBENT NON-POLAR SOLVENT, - Pads or Roll**: Repels polar solvents (water), absorbs non-polar solvents (straight chain hydrocarbons, oils, some freon liquids, carbon tetrachloride); Nominal pad size 18" x 18"; or roll 12" to 15" wide x 150' long.	150 square feet of coverage	40CFR 300.915(g)	**R**	**R**	**R**
9.2.2 **ABSORBENT GENERAL PURPOSE or POLAR SOLVENT, - Pads or Roll**: Absorbs polar solvents (water, acids, alkalis). If General Purpose type also will absorb non-polar solvents (straight chain hydrocarbons, oils, benzene ring compounds) Nominal pad size 18" x 18"; or roll 12" to 15" wide x 150' long.	150 square feet of coverage	40CFR 300.915(g)	**R**	**R**	**R**
9.2.3 **ABSORBENT NON-POLAR SOLVENT MINI-BOOMS - Pigs, Socks**: Repels polar solvents (water), absorbs non-polar solvents (straight chain hydrocarbons, oils, some freon liquids, carbon tetrachloride); Nominal Dia. 3 to 6"; Nominal Length 4 – 12' each.	40 feet total length	40CFR 300.915(g)	**R**	**R**	**R**
9.2.4 **ABSORBENT GENERAL PURPOSE or POLAR SOLVENT MINI-BOOMS - Pigs, Socks:** Absorbs polar solvents (water, acids, alkalis). If General Purpose type also will absorb nonpolar solvents (straight chain hydrocarbons, oils, benzene ring compounds). Nominal Dia. 3 to 6"; Nominal Length 4 – 12' each.	40 feet total length	40CFR 300.915(g)	**R**	**R**	**R**
9.2.5 **ABSORBENT NON-POLAR SOLVENT, - Pillows**: Repels polar solvents (water), absorbs non-polar solvents (straight chain hydrocarbons, oils, some freon liquids, carbon tetrachloride); Nominal size – 2 to 3 gallon absorption capacity each pad.	10 Gallon Absorption	40CFR 300.915(g)	**R**	**R**	**Opt**
9.2.6 **ABSORBENT GENERAL PURPOSE or POLAR SOLVENT, - Pillows**: Absorbs polar solvents (water, acids, alkalis). If General Purpose type also will absorb non-polar solvents (straight chain hydrocarbons, oils, benzene ring compounds). Nominal Dia. 3 to 6"; Nominal size – 2 to 3 gallon absorption capacity each pad.	25 Gallon Absorption	40CFR 300.915(g)	**R**	**R**	**Opt**
9.2.7 **ABSORBENT SPONGE – Mercury Kit**: Consists of two basic parts; Mercury absorbing sponges, and approx. 500 gram container of Mercury absorbing powder. Some kits also include a hand operated suction pump.	1 Kit		**R**	**R**	**Opt**

9.2.8 **BOOM, CONTAINMENT, Non-Absorbing**: For calm water corralling of a floating solvent/oil only, not for absorption; Buoyancy to weight ration 6:1; Grab tensile strength of 500 lbs and tongue tear strength of 150 lbs. Nominal size – 4" float x 6" skirt x 25' long.	100 Feet	OPA-90 Calm Water	**Opt**	**Opt**	**Opt**
9.2.9 **BOOM, CONTAINMENT, Oil Absorbing**: Will not absorb water; For corralling and absorption of floating solvent/oil; No skirts; Will not sink; Linkable; Nominal size – 5" to 8" dia. X 10 to 25' long; Nominal absorption capacity 5 to 15 gallons per 10 foot section deployed, depending on diameter.	100 feet; and 50 gallons Absorption		**Opt**	**Opt**	**Opt**
9.2.10 **PIPE, PLASTIC**: Assortment of various sizes and lengths to aid in construction of over-flow and under-flow dams; Nominal sizes include 8' lengths of 12" dia.; 8" dia.; 6" dia.; 4" dia.	One 8' length of at least 3 sizes		**R**	**R**	**R**
9.3 Mechanical Intervention [Sub-Category]					
9.3.1 **CHLORINE "A", Kit**: For repair or plugging leaks in chlorine gas cylinders.	1 Kit, Complete	Chlorine Institute	**R**	**R**	**N/A**
9.3.2 **CHLORINE "B", Kit**: For repair or plugging of leaks in chlorine one ton cylinders.	1 Kit, Complete	Chlorine Institute	**R**	**R**	**N/A**
9.3.3 **CHLORINE "C"**, Kit: For repair or plugging of leaks in chlorine rail tank cars or highway tank trucks.	1 Kit, Complete	Chlorine Institute	**R**	**R**	**N/A**
9.3.4 **CHLORINE TRAINING PROP, One Ton**: Training facsimile of one ton cylinder to allow application of the "B" Kit.	1 Kit, Complete	Chlorine Institute			
9.3.5 **SULFUR DIOXIDE UPGRADE For Kit "A"**: Allows for use of Chlorine Kit "A" for sulfur dioxide gas cylinders by providing special parts and gaskets.	1 Upgrade Kit, Complete	Chlorine Institute	**R**	**R**	**N/A**
9.3.6 **SULFUR DIOXIDE UPGRADE For Kit "B"**: Allows for use of Chlorine Kit "B" for sulfur dioxide one ton cylinders by providing special parts and gaskets.	1 Upgrade Kit, Complete	Chlorine Institute	**R**	**R**	**N/A**
9.3.7 **SULFUR DIOXIDE UPGRADE For Kit "C"**: Allows for use of Chlorine Kit "C" for sulfur dioxide rail tank cars by providing special parts and gaskets.	1 Upgrade Kit, Complete	Chlorine Institute	**R**	**R**	**N/A**
9.3.8 **ANHYDROUS AMMONIA "A", Kit**: For repair or plugging leaks in anhydrous ammonia gas cylinders.	1 Kit, Complete		**Opt**	**Opt**	**N/A**
9.3.9 **MIDLAND RAIL TANK CAR, Three Part Kit**: Advertised to be "universal", but does not fit all dome valve assemblies; Functional for repair or plugging leaks in predominantly LPG rail tank cars, but can fit some sulfur dioxide and hydrogen sulfide tank cars; Consists of three (3) separate large kit boxes.	1 Kit, Complete		**Opt**	**Opt**	**N/A**
9.3.10 **PATCH AND REPAIR, PIPE, LIQUIDS, Standard, Kit**: Consists of (at a minimum) externally applied single bolt or dual bolt (preferable) steel pipe clamps, with rubber sheeting lining; Ten or more different pipe sizes ranging from 1/2" dia. pipe to at least 4" dia. pipe; with extra 1/8" neoprene material.	1 Kit		**R**	**R**	**R**
9.3.11 **PATCH AND REPAIR, PIPE, LIQUIDS, Extended, Kit**: Consists of (at a minimum) externally applied dual bolt steel pipe clamps, with rubber sheeting lining; Three or more different pipe sizes ranging from 4 1/2" dia. pipe to at least 8" dia. pipe; with extra 1/8" neoprene material.	1 Kit		**Opt**	**Opt**	**Opt**

9.3.12 **PATCH AND REPAIR, PIPE, LIQUIDS, Heavy Duty, Kit**: Consists of (at a minimum) high ferrous steel, nickel plate, or stainless steel externally applied dual bolt or quadruple bolt (preferable) pipe clamps, with rubber sheeting lining; Ten or more different sizes ranging from 1" dia. pipe to at least 5" dia. pipe; with extra 1/8" neoprene material. Pipe clamps of this design range up to 18" in diameter.	1 Kit		**Opt**	**Opt**	**Opt**
9.3.13 **CLAMP, PIPE, GAS, Line, Mechanical**: Used for squeezing shut natural gas lines on the low pressure (residence) side of utility regulator; Nominal 2" pipe diameter, mechanically operated.	1 Kit		**R**	**R**	**N/A**
9.3.14 **PATCH, PIPE, GAS, Line, Hydraulic**: Heavy Duty squeeze tool for squeezing shut natural gas lines of 1" to approx. 3 ½" in diameter, hydraulically operated.	1 Kit		**Opt**	**Opt**	**N/A**
9.3.15 **PATCH, PIPE, LIQUID, Pneumatic, Flange**: Large heavy duty rubber bandage type device nominal 8" x 36" long, slips over leaking pipe from 2" to 8" in dia, pipe flange, or pipe valve connection, then inflated. Requires air source, air hose, regulator.	1 Kit	Air source, hose, regulator, ratcheting straps from one kit can be used for another kit if of same manufacturer and compatible (Do not need to duplicate).	**R**	**R**	**R**
9.3.16 **PATCH, PIPE, LIQUID, Pneumatic, Bandage**: Heavy duty rubber bandages of nominal 36" long x 8" wide, and 70" long x 8" wide; wrapped around leaking pipe from 2" to 19" in dia., then inflated. Requires air source, air hoses, regulator.	1 Kit		**Opt**	**Opt**	**Opt**
9.3.17 **PATCH, TANKER, LIQUID**: Large foam and plastic patch 12" x 7 " with 6 feet of ratchet strap for 55 gallon drums. Extendable to 25 feet with extra strapping for highway tanker patching capability.	1 Kit		**R**	**R**	**R**
9.3.18 **PATCH, TANKER, LIQUID, Side**: Pneumatic operated leak sealing patch or bag, with straps and ratchets to hold in place. Compressed air expands patch (nominal size 24" x 12") to seal leak in side of large tanks, tank cars, or tankers. Requires air hoses, regulator, air source usually supplied as part of kit.	1 Kit: Either one will satisfy requirement		**R**	**R**	**R**
9.3.19 **PATCH, TANKER, LIQUID, Side, Drainage Control**: Identical to previous item, but rubber patch is heavy duty construction, with internal plumbing attached to allow for controlled drainage or bleed-off of liquid.			**R**	**R**	**R**
9.3.20 **PATCH, TANKER, LIQUID, End**: Pneumatic operated leak sealing patch or bag, with straps and ratchets to hold in place. Compressed air expands special patch (nominal size 24" x 12") with four eye hooks at corners to seal leak on curved end of large tanks, tank cars, or tankers. Requires air source; air hoses, regulator usually supplied as part of kit, and is an up-grade of previous kit.	1 Kit		**Opt**	**Opt**	**Opt**
9.3.21 **PATCH, TANKER, LIQUID, Magnetic**: Nominal 15" x 32" stainless steel backing, with eight magnets, for ferrous metal highway tank trucks, and other low gravity ferrous metal tank leaks.	1 Unit		**Opt**	**Opt**	**Opt**
9.3.22 **PATCH, TANKER, LIQUID, Suction Cup**: Nominal 18" x 32" stainless steel backing, with eight EPDM suction assemblies, for use on non-ferrous tanks and tank trucks.	1 Unit		**Opt**	**Opt**	**Opt**

9.3.23 **PATCH, DRUM, LIQUID, Magnetic**: A 2" foam and plastic patch approx. 10" x 6" attached to a 32" x 10' pliable metal backing, equipped with two strong magnets on both ends. Magnets hold patch in place on ferrous metal drums and highway tank trucks.	1 Unit		**Opt**	**Opt**	**Opt**
9.3.24 **PATCH, DRUM, LIQUID, Pneumatic, Kit**: Small rubber patches of nominal 4" x 4", 4" x 9", and 7" x 7", held in place by straps and ratchets, patch inflated to stop leak. Requires air hose, air source, and regulator; Can be part of or additional accessories of previous kits if these inflatable patches are included in another kit (i.e. 9.3.15 or 9.3.17 or 9.3.18).	1 Kit	Air source, hose, regulator, ratcheting straps from one kit can be used for another kit if of same manufacturer and compatible (Do not need to duplicate)	**R**	**R**	**R**
9.3.25 **PATCH, DRUM, LIQUID, Suction Cup**: Same as previous Item but has two adjustable suction cups on both ends for use on non-ferrous drums and tank trucks.	1 Unit		**Opt**	**Opt**	**Opt**
9.3.26 **PATCH, DRUM, LIQUID, Compression, Kit**: Consists of 6 different sizes of tapered plug; 2 different sizes ball plug; 2 different sizes "T" plug, all with butterfly nuts; 8 different sizes wood dowels, and other parts as described.	1 Kit - Must Consist Of At Least 6 – tapered plugs, diff. sizes 2 – ball plugs, diff. sizes 2 – "T" bolt patch, diff. sizes 8 – wood dowels, diff. sizes 1 – 8" x 12" rubber or foam sheet Assortment of sheet metal screws		**R**	**R**	**R**
9.3.27 **PATCH, DRUM, LIQUID, Cribbing**,: Separate stainless steel plate and soft neoprene closed cell foam nominal 8" x 12"; With hardwood cribbing, secured with two 22' nylon straps and ratcheting buckles.	1 System		**Opt**	**Opt**	**Opt**
9.3.28 **PLUGS, STOPPER, LIQUID, Compression, Replacement**: Individual replacement 6 piece compression stopper plugs for holes from ½" up to 2" dia., with butterfly nut, for Drum, Liquid, Compression kit.	1 each of 2 sizes		**Opt**	**Opt**	**Opt**
9.3.29 **PLUGS, TAPERED STOPPER, LIQUID, Compression, Extra Large**: Individual compression stopper plugs for holes 3" to 4" dia., with butterfly nut; Sizes as indicated. (Complements and enhances Kit Item # 9.3.26).	1 each of 2 sizes	Must Consist Of One – 3" dia tapered plug, and One – 4" dia. tapered plug	**R**	**R**	**R**
9.3.30 **PLUGS, TAPERED STOPPER, LIQUID, Compression, Replacement**: Individual tapered, ball or half-round stopper plugs for holes up to 2" dia., with butterfly nut, for Drum, Liquid, Compression kit..	1 each of 2 sizes		**Opt**	**Opt**	**Opt**
9.3.31 **PLUGS, BALL or HALF-ROUND, LIQUID, Compression, Extra Large**: Individual tapered, ball or half-round stopper plugs for holes 3 to 4 " dia., with butterfly nut; Sizes as indicated. (Compliments and enhances Kit Item #9.3.26).	1 each of 2 sizes	Must Consist Of Ball or Half-Round: One – 3" One – 4"	**R**	**R**	**R**
9.3.32 **PLUGS, "T" BOLT, LIQUID, COMPRESSION, Extra Large**: Stainless steel curved plate and 3/4" soft neoprene closed cell foam for irregular slits up to 3" long; Sizes as indicated. (Compliments and enhances Kit item # 9.3.26).	1 each of 2 sizes	Must Consist Of Two – 3" or larger, square curved plate	**R**	**R**	**R**
9.3.33 **PLUGS, CONICAL, LIQUID, Drain**: Kit consisting of three 10" to 13" long tapered plastic plugs with eye bolts, ranging in sizes from 2 ½ " to 8" dia. for holes, drains, gravity flow pipes.	Set of at least 3 sizes		**R**	**R**	**R**

9.3.34 **PLUGS, TAPERED, LIQUID, Pneumatic**: Kit often comes with at least 3 different types of rubber plugs; Round tapered to 4" dia and 10" long; Narrow wedge tapered 2 ½" wide, Wide wedge tapered 4 ½" wide; Includes quick connect/quick-disconnect application lance; Requires air source, air hoses, regulator.	Set of at least 3 sizes	Air source, hose, regulator, ratcheting straps from one kit can be used for another kit if of same manufacturer and compatible (Do not need to duplicate)	**Opt**	**Opt**	**Opt**
9.3.35 **PLUGS, EXPANSION, LIQUID, Standard, Kit**: Kit consisting of plumber's style expansion plugs with wing nut; 1", 1 ¼", 1 ½", 1 ¾", 2", 2 ½", 3", 3 1/2", 4" for drains or open butt pipe. Kit commercially available but often is "home derived", assembling pipe plugs from local plumbing distributor.	Mix or match set of at least 7 different sizes, of either style		**R**	**R**	**R**
9.3.36 **PLUGS, EXPANSION, LIQUID, Vented, Kit**: Kit basically same as previous, but consisting of special plumber's style expansion plugs with wing nut; 1", 1 ¼", 1 ½", 1 ¾", 2", 2 ½", 3", 3 ½", 4", all of which have ¼" copper vent pipe incorporated through plug, with threaded end; For drains or open butt pipe. Kit commercially available but often is "home derived", assembling pipe plugs from local plumbing distributor.			**R**	**R**	**R**
9.3.37 **PLUGS, EXPANSION, LIQUID, Specialized, Kit**: Kit consisting of plumber's style expansion plugs with turn nut and 4" long shaft handle but for extra small style plumbing typically found in laboratories; ¼", 3/8" ½", 5/8", 3/4" for drains or open butt pipe. Kit often is "home derived", assembling pipe plugs from specialty tubing and plumbing distributor.	One set of at least 4 different sizes		**opt**	**Opt**	**Opt**
9.3.38 **PLUGS, EXPANSION, LIQUID, Heavy Duty, Kit**: Kit consisting of plumber's style extra-large commercial expansion plugs with wing nut or bolt; 5", 6", 7", 8", 10", 12", 14" for drains or open butt pipe. Some come with open pipe down center with valve, to control leak or flow once plug is in place. Kit often is "home derived", assembling pipe plugs from fire sprinkler or sewer plumbing distributor.	Selection of various sizes for local needs		**Opt**	**Opt**	**Opt**
9.3.39 **PLUGS, INFLATABLE, LIQUID, Small Pipe, Kit**: Kit consisting of smaller diameter pipe (½", ¾", 1", 1 ¼", 1 ½"), sometimes known as "Test Ball" or "Test Tube", inflatable rubber tubes inserted into open butt pipe or drain; One type uses domestic water to inflate, another type uses compressed air from bicycle pump to inflate; Have bleed valves, Nominal lengths 4" to 12".	Selection of various sizes for local needs		**opt**	**Opt**	**Opt**
9.3.40 **PLUGS, INFLATABLE, LIQUID, Large Pipe, Kit**: Kit consisting of very large heavy duty inflatable rubber tubes or balls, usually by air; Variety of sizes available (4", 5", 6", 8", 10", 12", 15", 18", 22"). Kit often is "home derived", assembling plugs from sewer or water main plumbing distributors or suppliers; Popular with Water Utility Departments.	Selection of various sizes for local needs		**opt**	**Opt**	**Opt**

9.3.41 **PLUGS, INFLATABLE, LIQUID, Drain and Sewer**: Kit consists of 3 to 7 inflatable plug bags of heavy duty construction, capable of being inserted into storm drains, pipes ranging from 5" to 55" in dia. Inflation air supplied by SCBA tank; Kit should be complete with air hoses, manifold, and pressure regulator.	Selection of various sizes for local needs		**opt**	**Opt**	**Opt**
9.3.42 **PLUGS, END CAP, LIQUID, Kit**: Also known as "Jim Caps", rubber cap fitting over open butt end of pipe, and has metal tightening band with screw (Similar to radiator clamp tightening band); Nominal sizes 1", 1 ¼", 1 ½", 1 ¾", 2", 2 ½", 3", 3 1/3", 4"; Kit often is "home derived", assembled from devices from local plumbing distributor.	Selection of at least 7 different sizes		**R**	**R**	**R**
9.3.43 **PLUGS, END CAP, LIQUID, Specialized, Kit**: Also known as "Jim Caps", same as previous item, but have center plumbing and valve to control flow; Nominal sizes 1", 1 ¼", 1 ½", 1 ¾", 2", 2 ½", 3", 3 1/3", 4"; Kit often is "home derived", assembled from devices from commercial plumbing distributor.			**R**	**R**	**R**
9.3.44 **PLUGS, DOWELS, LIQUID, Assortment**: Long tapered round wood, rubber, or plastic plugs ranging from 1" dia to 5" dia, and 3" long to 10 " long	Assortment to satisfy 1" to 5" full range		**R**	**R**	**R**
9.3.45 **PLUGS, DOWELS, LIQUID, Extra Large**: Long tapered round wood, rubber, or plastic plugs ranging from 4" dia to 8" dia.	Assortment to satisfy local needs		**Opt**	**Opt**	**Opt**
9.3.46 **PLUGS, WOOD WEDGES, LIQUID, Assortment**: Long tapered flat wood, rubber, or plastic wedges ranging from 1" w x 10" long to 3" w x 10 " long.	Assortment to satisfy local needs		**Opt**	**Opt**	**Opt**
9.3.47 **PLUGS, BOILER, THREADED**: Round tapered steel plugs, threaded, 1/8" to ¾" nominal diameter, by about 2" long.			**Opt**	**Opt**	**Opt**
9.3.48 **DOME LID LOCK, Screw Clamp**: Secures or tightens highway tanker "manway" lids; Adjustable for width with sliding clamp tongs, and large center screw bolt for tightening.	Set of 4, mix or match		**R**	**R**	**R**
9.3.49 **DOME LID LOCK, Spring Loaded**: Secures or tightens highway tanker "manway" lids; Spring loaded side tongs adjust to width of lid, and large center screw bolt for tightening.			**R**	**R**	**R**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
10. DECONTAMINATION					
10.1 Ground Protection [Sub-Category]					
10.1.1 **TARPS, PLASTIC, Ground Cover**: At least 12' x 12" each, to protect ground and aids in identifying decontamination corridor; Also can be used for tool lay-out, shade, and other utilities .	2		**R**	**R**	**R**
10.1.2 **TARPS, CARRY-ALL, Small**: Nominal 6' by 6', a small tarp, or carry-all (has handles) for contaminated equipment drop at De-Con first station.	1		**R**	**R**	**R**
10.1.3 **SHEETING, PLASTIC, ROLL, Heavy Duty**: Nominal size 5' wide x 100' length, unfolds to nominal 20' wide, water repellent polyethylene.	1 Roll		**R**	**R**	**R**
10.1.4 **CATCH BASIN**: Nominal six feet square, 18" high, with rigid sides; Nominal 120 gallon capacity. Sometimes is a separate item, or sometimes supplied with a Gross De-Con Shower system or kit.	1	This item might be part of the de-con shower system item #10.1.5 and satisfies this requirement	**R**	**R**	**R**
10.1.5 **SHOWER, GROSS DECONTAMINATION**: Usually utilized at first "station" in a decontamination corridor process; Can be homemade, many commercial styles available; Water supplied by garden hose or 1 ½" fire department connections; Fits into Catch Basin or comes with its own Catch Basin as a kit.	1		**R**	**R**	**R**
10.1.6 **EYE WASH:** 32.oz. bottles.	2		**R**	**R**	**R**
10.1.7 **POOL, PORTABLE, LARGE**: Nominal 60 to 80 gallon capacity, utilizing an expandable – collapsible spring hoop ring to support plastic sheeting for pool; Or, inflatable sidewalls; Nominal 60" diameter. Liners are disposable and replaceable.	3		**R**	**R**	**R**
10.2 Support Tools for Decontamination [Sub-Category]					
10.2.1 **STOOLS, Portable**: Plastic, stackable or folding.	4		**R**	**R**	**R**
10.2.2 **BRUSHES, LONG HANDLE, SOFT BRISTLE**: Toilet type: nominal 16" long, with plastic bristles	4		**R**	**R**	**R**
10.2.3 **BRUSHES, SHORT HANDLE, SOFT BRISTLE**: Toilet type: Plastic bristles	2		**R**	**R**	**R**
10.2.4 **BRUSHES, SHORT HANDLE, Rat Tail**: Carpenter type, synthetic bristles	2		**R**	**R**	**R**
10.2.5 **BRUSHES, CAR WASH TYPE, Long Handle**: Soft bristled wand type brush, with nominal or extendable length to 3 feet minimum. May come with garden hose connection to supply a flow of water at brush end.	2		**R**	**R**	**R**
10.2.6 **SPONGE, SET**: Nominal 3 to 5" wide by 4 to 6" long x 4" deep,	Set of 4		**R**	**R**	**R**
10.2.7 **TOWELS, ABSORBANT, DRYING**: Commercial laundry towels, cotton, nominal 20" x 40"	8		**R**	**R**	**R**
10.2.8 **TOWELS, ABSORBANT, DISPOSABLE**: Paper towels, usually in rolls.	1 Roll		**R**	**R**	**R**

10.2.9 **BLANKETS, DISPOSABLE**:	4		**R**	**R**	**R**
10.2.10 **CADAVER BAGS**: Non-transparent	1		**Opt**	**Opt**	**Opt**
10.2.11 **CLOTHING, MODESTY**: Usually light weight disposable Tyvek® or equal, an array in various sizes; Complete with booties or foot protection.	Minimum of 12 sets		**R**	**R**	**R**
10.2.12 **TRAFFIC CONES, Ordinary**: Nominal 18" to 28" high, fluorescent red.	Minimum of 6		**R**	**R**	**R**
10.2.13 **TRAFFIC CONES, Ordinary, Reflective**: Nominal 18" to 28" R R R high fluorescent red, with reflective bands, or warning bands "DO NOT ENTER" or "KEEP OUT".			**R**	**R**	**R**
10.2.14 **TRAFFIC CONES, Miniature**: Nominal 4" to 6" high	Ten to Twenty		**Opt**	**Opt**	**Opt**
10.2.15 **SOAP or DETERGENT, SOFT, Biodegradable**: In dispense containers.	1 Pint		**R**	**R**	**R**
10.2.16 **CHEM-TAPE**: Nominal 2" wide in rolls of 50'. Similar to Duct Tape but has chemical resistant outer layer.	2 Rolls		**R**	**R**	**R**
10.2.17 **CLOTHING REMOVAL TOOLS**: Such as scissors, shears, etc.	1		**R**	**R**	**R**
10.2.18 **PERSONAL PROPERTY TRACKING**: Kit to consist of forms, tags, receipts, sealable baggies, labels, etc., to document personal property collected such as jewelry, wallets, pagers, cell phones, and documents personal information of owner.	Sufficient to manage 12 individuals minimum		**R**	**R**	**R**

10.3 Water Supply, Distribution Tools [Sub-Category]					
10.3.1 **ADAPTOR, 1 ½" to Garden Hose Reducer(s)**:	2				
10.3.2 **MANIFOLD, HEAVY DUTY**: All metal construction (steel / bronze) with 1 ½" female fire hose inlet swivel coupling, and four to six brass ¾" garden hose discharge ball gates; Tested to 250 psi; Mountable on a sturdy platform.	1 of either type listed (10.3.2 or 10.3.3)		**R**	**R**	**R**
10.3.3 **MANIFOLD, LIGHT DUTY**: Plastic PVC construction with 1 R R R ½" female fire hose inlet swivel coupling, and three to six brass ¾" garden hose discharge gates; Mountable on a sturdy platform; Commercially available, or often home derived.			**R**	**R**	**R**
10.3.4 **HOSE, GARDEN**: May be in nominal minimum 12' to 24' lengths, may be collapsible – flat type, ½" dia.	3		**R**	**R**	**R**
10.3.5 **HOSE, GARDEN, SHUT-OFF, In Line**: Separate detachable and replaceable ¼ - turn valve. Might be attached to and included with the car wash applicator (item #10.2.5).	Total of 3 On hand	Might be attached to and included with Item # 10.2.5.	**R**	**R**	**R**
10.3.6 **WRENCH, HYDRANT, UNIVERSAL**:	1		**R**	**R**	**R**
7 **APPLICATOR, NOZZLE, Garden Hose Adjustable**: Wash / Spray Nozzles	2		**R**	**R**	**R**
10.3.8 **APPLICATOR, PRESSURE, Garden Sprayer**: Hand Pressurized pump sprayer.	1		**R**	**R**	**R**

10.4 Collection [Sub-Category]					
10.4.1 **BUCKETS**: Ordinary plastic, 5 gallon capacity, with or without lids	4		**R**	**R**	**R**
10.4.2 **BAGS, HEAVY DUTY YARD, Large**: Nominal 32" wide x 48" long, 3 mil thick, 42 gallon capacity, with tie straps or loc-ties.	10		**R**	**R**	**R**
10.4.3 **DEBRIS COLLECTION UNIT**: 35 to 65 gallon capacity, light duty and light weight polyethylene drums, or collapsible mylar drum liners; Suitable for collection of debris and soiled clothing only, for De-Con zone, not recommended for transfer operations and other containment activities.	Must Have As Minimum: One – 10.4.5 One – 10.4.6 And Any one of the three as described, for a total of 3.		**R**	**R**	**Opt**
10.4.4 **DRUM, CONTAINMENT UNIT, 85 to 95 Gallon**: Steel or polyethylene drum with removable lid, suitable for multiple uses such as debris collection in De-Con zone, containment for leaking 55 gallon drum and other secondary containment, or catch reservoir for transfer operations. Must have at least one.			**R**	**R**	**Opt**
10.4.5 **DRUM, OVER-PACK UNIT, 110 Gallon**: Heavy duty polyethylene drum with screw lid, suitable for multiple uses such as debris collection in De-Con zone, containment for leaking 55 gallon drum or other secondary containment, salvage operations, or catch reservoir for transfer operations. Must have at least one.			**R**	**R**	**Opt**
10.4.6 **DRUM, LINER, 85 to 95 Gallon**: Heavy duty polyethylene. *Do not need if use poly drum.*	10		**Opt**	**Opt**	**Opt**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
11. COMMUNICATIONS					
11.1 Radio [Sub-Category]					
11.1.1 **RADIO, PORTABLE, Intrinsically Safe (I.S.)**: Walkie Talkie style, with carrying case, and appropriate support hardware to be worn on person; Those assigned for use insuit to be equipped with separate private tactical channels. UL or FM "I.S." label must be on unit, and "I.S." battery must be of correct model compatible with unit, and neither can be interchanged with non-I.S. components.	1 for each assigned member	**Must Be:** Intrinsic to Underwriter's Laboratory #913	**R**	**R**	**R**
11.1.2 **RADIO, PORTABLE, Voice Scrambler**: Secure Voice hardware and interfacing	Each Portable Unit		**Opt**	**Opt**	**Opt**
11.1.3 **RADIO, PORTABLE, Headphone Set (NOT for in-suit use)**: Complete with boom mic, ear mic, bone mic, or throat mic, and necessary attachable hardware to walkie talkie. One for each member for field use.	1 for each assigned member		**Opt**	**Opt**	**Opt**
11.1.4 **RADIO, PORTABLE, In-Suit Communications**: Complete with earphone system, microphone system (i.e. built into SCBA facepiece, or throat mic, or bone mic, or ear mic, etc), remote "Push-To-Talk" switch, and necessary attachable hardware and support connector system. Designs and configurations will vary and are influenced by support systems provided by portable radio manufacturer, and manufacturer of SCBA. See also 12.1.6.	6 – Type I 4 – Type II 4 – Type III				**Opt**
11.1.5 **RADIO, PORTABLE, Hands-Free "Voice Actuated"**: Hardware and support connector system, switchable between "Push-To-Talk" mode and "Voice Activated" mode, for in-suit use.	1 for each assigned member		**Opt**	**Opt**	**Opt**
11.1.6 **RADIO, PORTABLE, Interchangeable battery, Intrinsically Safe (I.S.)**: Two batteries assigned per unit, the second set for back-up; Certified intrinsically safe.	2 for each portable unit	**Must Be:** Intrinsic to UL # 913	**R**	**R**	**R**
11.2 Cellular Phone [Sub-Category]					
11.2.1 **PHONE, CELLULAR**: Priority access service capable; Analog and digital function; CPAS, BROADBAND, PCS and ROAMNG enabled;	1 per Company	IEEE 1512.3 IEEE 269	**R**	**R**	**R**
11.2.2 **PHONE, Satellite**: INMARSAT-B minimum, ISDN preferable which increases high speed data flow to 64,000 bps; UHF.INTELSAT; and UDI support. Complete with portable high gain directional antenna, base transmit unit, interface frequencies.	1 per Company		**Opt**	**Opt**	**Opt**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
12. RESPIRATORY PROTECTION					
12.1 Self-Contained [Sub-Category]					
12.1.1 **SCBA, COMPLETE, STRUCTURAL, 1 Hour Rating**: With bottle; unit must be NFPA and NIOSH certified for routine fire fighter use.	1 for each assigned member	NFPA; NIOSH	**N/A**	**R**	**R**
12.1.2 **SCBA, COMPLETE, WMD CBRN, 1 Hour Rating**: With bottle; unit must be NFPA structural firefighting compliant and NIOSH certified for WMD CBRN threat atmospheres	1 for each assigned member	NFPA; NIOSH CBRN	**R**	**N/A**	**N/A**
12.1.3 **MASK, FULL-FACE, STRUCTURAL**: NFPA and NIOSH compliant for structural fire fighter use.	1 for each assigned member	NFPA; NIOSH		**R**	**R**
12.1.4 **MASK, FULL-FACE, WMD CBRN**: Facepiece must be NFPA structural firefighting compliant and NIOSH certified for WMD CBRN threat atmospheres.	1 for each assigned member	NFPA; NIOSH CBRN	**R**	**N/A**	**N/A**
12.1.5 **MASK, HEADS-UP-DISPLAY**: Light emitting diode (LED) display within facepiece to monitor numerous ancillary inputs such as remaining air time, air pressure, ambient temperature, etc.; Usually available as add-on option from manufacturer.	1 for each assigned member	NIOSH	**Opt**	**Opt**	**Opt**
12.1.6 **MASK, BUILT-IN COMMUNICATIONS Interface**; Built-in microphone or bone mic, with earphone or built-in head phone set, complete with interface wire harness to portable radio, and push-to-talk (PTT) switch. Satisfies 11.1.4.	1 for each assigned member		**Opt**	**Opt**	**Opt**
12.1.7 **BOTTLE, Spare**: Extra replacement air bottle of same type, and size.	1 spare bottle for each assigned SCBA	DOT	**R**	**R**	**R**
12.1.8 **SUPPORT, UMBILICAL AIR**: Air from outside source (cascade system or portable air cart) supplied to wearer via umbilical hose system and manifold; Manifold to supply low pressure source to four users; Minimum of 600 feet of low pressure hose required; This system Is often used to provide interior suit cooling as an option. (SEE also Section 6.4.)	System to accommodate four users, 150' low pressure air hose each	NIOSH, OSHA	**Opt**	**Opt**	**N/A**

12.2 Air Purifying Respirator [Sub-Category]					
12.2.1 **MASK and UNIT, APR, INDUSTRIAL**: Full facepiece, single or dual cartridge style, speaking diaphragm, certified for use in industrial chemical threat atmospheres only.	1 for each assigned member	NIOSH	**R**	**Opt**	**Opt**
12.2.2 **MASK and UNIT, APR, CBRN**: Full facepiece, single or dual cartridge style, speaking diaphragm, for use in industrial chemical threat atmospheres AND CBRN atmospheres.	1 for each assigned member	NIOSH - CBRN	**R**	**N/A**	**N/A**
12.2.3 **MASK and UNIT, PAPR, INDUSTRIAL**: Full facepiece, single or multi cartridge style, speaking diaphragm, pump, airline, certified for use in industrial chemical threat atmospheres only. Meets 12.2.1 requirement	1 for each assigned member	NIOSH	**Opt**	**Opt**	**Opt**
12.2.4 **MASK and UNIT, PAPR, CBRN**: Full facepiece, single or multi cartridge style, speaking diaphragm, pump, airline, certified for use in industrial chemical threat atmospheres AND CBRN atmospheres. Meets 12.2.2 requirement	1 for each assigned member	NIOSH - CBRN	**Opt**	**N/A**	**N/A**
12.2.5 **CARTRIDGES, APR or PAPR, INDUSTRIAL**: Cartridges certified only for industrial chemical threat atmospheres; Cartridges to be multi-gas and organic vapor protective, with solid particulate and liquid aerosol protection.	Multi-gas cartridge set for each APR	NIOSH	**R**	**Opt**	**Opt**
12.2.6 **CARTRIDGES, APR or PAPR, CBRN**: Cartridges are certified for WMD CBRN threat atmospheres.	CBRN cartridge set for each APR	NIOSH - CBRN	**R**	**N/A**	**N/A**

Item Name and Description	Requirement	Certification Or Standard	Type I	Type II	Type III
13. TOOLS / OTHER					
13.1 General Purpose, Hand Tools, Large [Sub-Category]					
13.1.1 **SHOVEL, Round Point, Steel**; long handle	1		**R**	**R**	**R**
13.1.2 **SHOVEL, Round Point, Polypropylene plastic**: Or equal: long handle	1		**Opt**	**Opt**	**Opt**
13.1.3 **SHOVEL, Square Point, Steel**: long handle	1		**R**	**R**	**R**
13.1.4 **SHOVEL, Square Point, Polypropylene plastic**: Or equal, long handle	1		**R**	**R**	**R**
13.1.5 **SHOVEL, Scoop, Polypropylene plastic**: Or equal,	1		**R**	**R**	**R**
13.1.6 **BROOM, Street, Stiff Polypropylene Bristle**: With handle	1		**R**	**R**	**R**
13.1.7 **DRUM "Up-Ender"**:	1		**R**	**R**	**R**
13.1.8 **HAMMER, Sledge**: (7 – 10 Lbs)	1		**R**	**R**	**R**
13.1.9 **BAR, WRECKING**: – 36" or >	1		**R**	**R**	**R**
13.1.10 **COOLER, Rehydration**: Industrial quality five to 10 gallon capacity with spigot, carrying handle. Some come with a cup dispenser, 5 – 20 gallon	1		**R**	**R**	**R**
13.1.11 **MEGAPHONE:** Battery operated, 16 watt with 800' range; Adjustable volume.	1		**R**	**R**	**R**
13.1.12 **FIRST AID, Kit – Large**: Includes majority of gauze pads, wipes, tape, ointments, bandages, splints, tourniquets, and appropriate tools (i.e. scissors)	One of each or combination kit	ANSI Z-308.1	**R**	**R**	**R**
13.1.13 **FIRST AID, TRAUMA, Kit**: Contains equipment to augment standard first aid kit; resuscitator, variety of airways, burn sheets, cervical collar, cold packs, eyewash solutions, etc.			**R**	**R**	**R**
13.1.14 **MEDICAL MONITORING, Kit**: For both Pre- and Post entry to monitor baseline vitals; Includes stethoscope, aneroid gage sphygmomanometer, thermometer unit, and scale; Should include forms for documentation.	1 kit		**R**	**R**	**R**
13.1.15 **FIRST AID, BLOOD PRESSURE MONITOR, Digital**: Battery operated, utilizing a finger cuff receptacle; Digital readout.	1 Unit		**Opt**	**Opt**	**Opt**
13.1.16 **ZONE MARKING, Kit**: Contains all tools necessary to help set up and identify various hazardous work zones; Barrier tape – 1000 feet rolls, yellow marked "CAUTION – DO NOT ENTER" or equal, and 1000 feet rolls, red marked; DANGER – HAZARDOUS CHEMICAL" or equal; Carpenter's chalk – powdered yellow and red, in 12 to 16 oz dispenser; Carpenter's heavy duty crayons, yellow and red.	1		**R**	**R**	**R**
13.1.17 **BARRICADE TAPE, CADDY**: A hand held carrier which may either dispense tape (3" wide x 1000 feet), assist in rewinding tape, or do both.	1 Caddy		**Opt**	**Opt**	**Opt**
13.1.18 **SCOPE, Spotting**: Includes binoculars; Adjustable telephoto spotting scope or binoculars with adjustable focus.	1 per company		**R**	**R**	**R**

13.2 General Purpose, Hand Tools, Small [Sub-Category]					
13.2.1 **HAMMER, Dead Blow**: 36 to 45 oz.	1		**R**	**R**	**R**
13.2.2 **HAMMER, Claw**: 20 to 24 oz.; Non-Sparking acceptable.	1	Item #13.3.7 Acceptable	**R**	**R**	**R**
13.2.3 **HAMMER, Engineer**: 36 to 40 oz.; Non-Sparking acceptable.	1	Item #13.3.8 Acceptable	**R**	**R**	**R**
13.2.4 **HAMMER, Ball Peen**: 16 to 40 oz.; Non-Sparking acceptable.	1	Item #13.3.9 Acceptable	**R**	**R**	**R**
13.2.5 **SCREWDRIVER, CHISEL, KIT**: To consist of at least any three of the following, in either short or long handle: Standard chisel tip– Small, medium, large, extra-large; Non-Sparking acceptable.	1 Kit of 3 different	Item #13.3.10 Acceptable	**R**	**R**	**R**
13.2.6 **SCREWDRIVER, PHILLIPS, KIT**: To consist of at least any three of the following, in either short or long handle: Phillips No. 1, 2, 3, 4.; Non-Sparking acceptable.	1 Kit of 3 different	Item #13.3.11 Acceptable	**R**	**R**	**R**
13.2.7 **PLIERS, ORDINARY, Utility**: Available in various sizes, 6", 7", 8", with square blunt end; Non-Sparking acceptable.	1	Item #13.3.12 Acceptable	**R**	**R**	**R**
13.2.8 **PLIERS, WIRE, Side Cutting**; Non-Sparking acceptable.	1	Item #13.3.13 Acceptable	**R**	**R**	**R**
13.2.9 **PLIERS, LONG-NOSE, Needle** – Between 7" to 10"; Non-Sparking acceptable.		Item #13.3.14 Acceptable	**R**	**R**	**R**
13.2.10 **PLIERS, COMBINATION, Kit**: To consist of any three of the following: Slip Joint, medium– 8", Slip joint heavy duty – 12", groove joint – 12", channel lock – 12"; Non-Sparking acceptable.	1 Kit of 3 different	Item #13.3.15 Acceptable	**R**	**R**	**R**
13.2.11 **PLIERS, LOCKING, Vice Grip Type, Kit**: To consist of any four of the following: Adjustable chain wrench, welding clamp, curved jaw locking, straight jaw locking, long nose locking, "C" clamp locking, sliding bar locking; Non-Sparking acceptable.	1 Kit of 4 different	Item #13.3.16 Acceptable	**R**	**R**	**R**
13.2.12 **WRENCH, ALLEN, Complete Set**, **English** (~9 piece)	1 Kit		**R**	**R**	**R**
13.2.13 **WRENCH, ALLEN, Complete Set, Metric** (~9piece)	1 Kit		**R**	**R**	**R**
13.2.14 **WRENCH, CRESCENT, Adjustable, Ki**t: Kit to include any two of the following: Adjustable 12", 15", 22" 24"; Non-Sparking acceptable.	1 Kit of 2	Item #13.3.18 Acceptable	**R**	**R**	**R**
13.2.15 **WRENCH, CRESCENT, Adjustable, Heavy Duty**: 26" to 36", aluminum or steel; Non-Sparking acceptable.	1	Item #13.3.19 Acceptable	**Opt**	**Opt**	**Opt**
13.2.16 **WRENCH, PIPE, Adjustable, Kit**: Kit to include any two of the following: House – 16", Standard - 18", Medium – 22", large – 28"; Non-Sparking acceptable.	1 Kit of 2	Item #13.3.20 Acceptable	**R**	**R**	**R**
13.2.17 **WRENCH, Pipe, Adjustable, Heavy Duty**: Available in sizes from 32" to 46"; Non-Sparking acceptable	1	Item #13.3.21 Acceptable	**Opt**	**Opt**	**Opt**
13.2.18 **WRENCH, UNIVERSAL, Bung Cap**: Several styles available, but should be able to function on 5 or more different bung caps and plugs; Non-Sparking acceptable.	1	Item #13.3.17 Acceptable	**R**	**R**	**R**
13.2.19 **WRENCH, COMBINATION, Ordinary, Kit**: (Open end and Box end), Set, to include any 10 of the following: 3/8", 7/16", ½", 9/16", 5/8", 11/16", ¾", 7/8", 1", 1 1/8", 1 ¼", 1 3/8"; Non-Sparking acceptable.	1 Kit of 10	Item #13.3.22 Acceptable	**R**	**R**	**R**

13.2.20 **WRENCH, COMBINATION, Industrial, Kit**: (Open end and Box end), Set, to include any 5 of the following: 1 ½", 1 5/8", 1 ¾", 1 7/8", 2", 2 ¼", 2 ½" ; Non-Sparking acceptable.	1 Kit of 5	Item #13.3.23 Acceptable	**Opt**	**Opt**	**Opt**
13.2.21 **WRENCH, SOCKET, Kit**: Socket set to include any 10 of the following: 3/8", 7/16", ½", 9/16", 5/8", 11/16", ¾", 7/8", 1", 1 1/8", 1 ¼", 1 3/8" ; Non-Sparking acceptable.	1 Kit of 10	Item #13.3.24 Acceptable	**Opt**	**Opt**	**Opt**
13.2.22 **WRENCH, SOCKET, Industrial, Kit**: Socket set to include any 5 of the following: 1 ½", 1 5/8", 1 ¾", 2", 2 ¼", 2 ½"; Non-Sparking acceptable.	1 Kit of 5	Item #13.3.25 Acceptable	**Opt**	**Opt**	**Opt**
13.2.23 **CHISEL, COLD, Standard or Hex** – One of either of the following sizes: ¾" x 9", 1" x 9", 1" x 12".	1 Chisel		**R**	**R**	**R**
13.2.24 **PUNCH, PIN** – 7" x 3/8"	1		**Opt**	**Opt**	**Opt**
13.2.25 **PUNCH, PIN** – 12" x 5/8"	1		**Opt**	**Opt**	**Opt**
13.2.26 **PUNCH, PIN, Spring Loaded**	1		**R**	**R**	**R**
13.2.27 **TAPE, MEASURING, Retractable, Metal**: 24' or greater.	1		**R**	**R**	**R**
13.2.28 **TAPE, MEASURING, Re-Wind, Non-Metallic**: 50 feet minimum, must be non-conductive.	1		**R**	**R**	**R**
13.2.29 **KNIFE, PUTTY, Scraping**: – 2' wide; Non-Sparking acceptable	1	Item #13.3.26 Acceptable	**R**	**R**	**R**
13.2.30 **KNIFE, GENERAL UTILITY, Cutting**: Any heavy duty knife including carpet cutting type:	1		**R**	**R**	**R**
13.2.31 **SHEARS, Cutting**: Any heavy duty shears suitable for cutting sheet metal, heavy carpet, plastic sheeting; Non-Sparking acceptable.	1	Item #13.3.27 Acceptable	**R**	**R**	**R**
13.2.32 **STRAPS, RATCHET, Tie down**: Nominal 1" x 20', 1000 lbs. Nominal minimum rating.	2		**R**	**R**	**R**
13.2.33 **STOP WATCH**:	1		**R**	**R**	**R**

13.3 Special Purpose Hand Tools [Sub-Category]

13.3.1 **GROUNDING, CABLE**: Insulated or non-insulated 3/16" or better carbon steel, 25 feet minimum, equipped with either "C" clamp / screw bolt or ¾" pin point hand clamps.	75 feet minimum		**R**	**R**	**R**
13.3.2 **GROUNDING, ROD**: Nominal length 4 feet to 6 feet minimum, and nominal dia. 3/8" to ½".	1		**R**	**R**	**R**
13.3.3 **VESTS, I.C.S., HazMat Group**: For all of the positions within the HM Group (HazMat Group Supervisor, Asst. Safety Officer, Entry Team Leader, De-Con Team Leader, Site Access Control Leader, Technical Specialist, Safe Refuge Area Manager)	1 Set	ANSI 107 and FIRESCOPE	**R**	**R**	**R**
13.3.4 **LIGHT PROBE, Fluorescent**: Nominal 25 watt, 36" long wand handle, insertable through bung hole of 55 gallon drum, and other confined spaces.	1	Intrinsically Safe	**Opt**	**Opt**	**Opt**
13.3.5 **AIR BAG, LIFTING, High Pressure, Kit**: Kit, operated by SCBA air bottle, to consist of one or a variety of air inflatable bags, with manifold and hose hardware, capable of lifting a nominal 30 tons to 12 inches	1 Kit		**Opt**	**Opt**	**Opt**
13.3.6 **NON-SPARKING, Hammer, Sledge**: 7 to 10 pound.	1		**R**	**R**	**R**

13.3.7 **NON-SPARKING, HAMMER, Claw**: 20 to 24 oz.; Also meets # 13.2.2	1		**R**	**R**	**R**
13.3.8 **NON-SPARKING, HAMMER, Engineer: 36 to 40 oz**.	1		**Opt**	**Opt**	**Opt**
13.3.9 **NON-SPARKING, HAMMER, Ball Peen: 16 to 40 oz.**	1		**Opt**	**Opt**	**Opt**
13.3.10 **NON-SPARKING, SCREWDRIVER, CHISEL, Kit**: To consist of at least any three of the following, in either short or long handle: Standard chisel tip– Small, medium, large, extra-large.	1 Kit of 3 different		**R**	**R**	**R**
13.3.11 **NON-SPARKING, SCREWDRIVER, PHILLIPS, Kit**: To consist of at least any three of the following, in either short or long handle: Phillips No. 1, 2, 3, 4.	1 Kit of 3 different		**R**	**R**	**R**
13.3.12 **NON-SPARKING, PLIERS, ORDINARY, Utility**: Available in various sizes, 6", 7", 8", with square blunt end.	1		**R**	**R**	**R**
13.3.13 **NON-SPARKING, PLIERS, WIRE, Side Cutting**:	1		**R**	**R**	**R**
13.3.14 **NON-SPARKING, PLIERS, LONG-NOSE, Needle**:	1		**R**	**R**	**R**
13.3.15 **NON-SPARKING, PLIERS, COMBINATION, Kit**: To consist of any three of the following: Slip Joint, medium– 8", Slip joint heavy duty – 12", groove joint – 12", channel lock – 12".	1 Kit of 3 different		**Opt**	**Opt**	**Opt**
13.3.16 **NON-SPARKING PLIERS, LOCKING, Vice Grip Type, Kit**: To consist of any four of the following: Adjustable chain wrench, welding clamp, curved jaw locking, straight jaw locking, long nose locking, "C" clamp locking, sliding bar locking.	1 Kit of 4 different		**Opt**	**Opt**	**Opt**
13.3.17 **NON-SPARKING, WRENCH, BUNG, Universal**: Several styles available, but should be able to function on 5 or more different bung caps and plugs.	1		**R**	**R**	**R**
13.3.18 **NON-SPARKING, WRENCH, CRESCENT, Adjustable, Kit**: Kit to include any two of the following: Adjustable 12", 15", 22", 24".	1 Kit of 2		**R**	**R**	**R**
13.3.19 **NON-SPARKING, WRENCH, CRESCENT, Adjustable, Heavy Duty**: 26" to 36", aluminum or steel.	1		**Opt**	**Opt**	**Opt**
13.3.20 **NON-SPARKING, WRENCH, PIPE, Adjustable, Kit**: Kit to include any two of the following: House – 16", Standard - 18", Medium – 22", Large – 28".	1 Kit of 2		**R**	**R**	**R**
13.3.21 **NON-SPARKING, WRENCH, Pipe, Adjustable, Heavy Duty**: Available in sizes ranging from 32" to 46".	1		**Opt**	**Opt**	**Opt**
13.3.22 **NON-SPARKING, WRENCH, COMBINATION, Ordinary, Kit**: (Open end and Box end), Set, to include any 10 of the following: 3/8", 7/16", ½", 9/16", 5/8", 11/16", ¾", 7/8", 1", 1 1/8", 1 ¼", 1 3/8"	1 Kit of 10		**Opt**	**Opt**	**Opt**
13.3.23 **NON-SPARKING, WRENCH, COMBINATION, Industrial, Ki**t: (Open end and Box end), Set, to include any 5 of the following: 1 ½", 1 5/8", 1 ¾", 1 7/8", 2", 2 ¼", 2 ½"	1 kit of 5		**Opt**	**Opt**	**Opt**
13.3.24 **NON-SPARKING, WRENCH, SOCKET, Kit**: Socket set to include any 10 of the following: 3/8", 7/16", ½", 9/16", 5/8", 11/16", ¾", 7/8", 1", 1 1/8", 1 ¼", 1 3/8"	1 Kit of 10		**Opt**	**Opt**	**Opt**
13.3.25 **NON-SPARKING, WRENCH, SOCKET, Industrial, Kit**: Socket set to include any 5 of the following: 1 ½", 1 5/8", 1 ¾", 2", 2 ¼", 2 ½".	1 Kit of 5		**Opt**	**Opt**	**Opt**
13.3.26 **NON-SPARKING, KNIFE, PUTTY, Scraping**: – 2' wide			**R**	**R**	**R**

13.3.27 **NON-SPARKING, SHEARS, Cutting**: Any heavy duty shears suitable for cutting sheet metal, heavy carpet, plastic sheeting.	1		**R**	**R**	**R**
13.3.28 **RADIANT HEAT SURFACE Temperature Reading**: Direct contact (i.e. magnetic, spring clip, etc.), with nominal range +350o to +750o F. (spring operated thermometers)	One, or One complete set		**Opt**	**Opt**	**Opt**
13.3.29 **RADIANT HEAT SURFACE SENSING, Temperature**: Temperature sensitive crayon kit, 10 crayons, each sensitive to a different temperature range; Usually melt at specified temperature, and might change color; Overall range nominal from +150o F to + 800o F.	1 Kit		**Opt**	**Opt**	**Opt**
13.3.30 **REFRIGERATOR, UTILITY, Small**: Installed onboard response unit, of nominal 18" wide by 18" tall by 12" deep	1		**Opt**	**Opt**	**Opt**

APPENDIX A
Personnel *Competencies* per level of training

OPERATIONS LEVEL COMPETENCIES

5.2.1.1.1 Given examples of the following tank cars, the operations level responder shall identify each tank car by type, as follows:

_____ (1) Cryogenic liquid tank cars
_____ (2) Nonpressure tank cars (general service or low pressure cars)
_____ (3) Pressure tank cars

5.2.1.1.2 Given examples of the following intermodal tanks, the operations level responder shall identify each intermodal tank by type, as follows:

_____ (1) Nonpressure intermodal tanks
_____ (2) Pressure intermodal tanks
_____ (3) Specialized intermodal tanks, including the following:
_____ (a) Cryogenic intermodal tanks
_____ (b) Tube modules

5.2.1.1.3 Given examples of the following cargo tanks, the operations level responder shall identify each cargo tank by type, as follows:

_____ (1) Compressed gas tube trailers
_____ (2) Corrosive liquid tanks
_____ (3) Cryogenic liquid tanks
_____ (4) Dry bulk cargo tanks
_____ (5) High pressure tanks
_____ (6) Low pressure chemical tanks
_____ (7) Nonpressure liquid tanks

5.2.1.1.4 Given examples of the following storage tanks, the operations level responder shall identify each tank by type, as follows:

_____ (1) Cryogenic liquid tank
_____ (2) Nonpressure tank
_____ (3) Pressure tank

5.2.1.1.5 Given examples of the following nonbulk packaging, the operations level responder shall identify each package by type, as follows:

_____ (1) Bags
_____ (2) Carboys
_____ (3) Cylinders
(4) Drums
_____ (5) Dewar flask (cryogenic liquids)

5.2.1.1.6* Given examples of the following radioactive material packages, the operations level responder shall identify the characteristics of each container or package by type, as follows:

_____ (1) Excepted
_____ (2) Industrial
_____ (3) Type A
_____ (4) Type B
_____ (5) Type C

5.2.1.2.1 Given examples of the following marked transport vehicles and their corresponding shipping papers, the operations level responder shall identify the following vehicle or tank identification marking:

_____ (1) Highway transport vehicles, including cargo tanks
_____ (2) Intermodal equipment, including tank containers
_____ (3) Rail transport vehicles, including tank cars

5.2.1.2.2 Given examples of facility containers, the operations level responder shall identify the markings indicating container size, product
_____ contained, and/or site identification numbers.

5.2.1.3 Given examples of hazardous materials incidents, the operations level responder shall identify the name(s) of the hazardous material(s) in
_____ 5.2.1.3.1 through 5.2.1.3.3.

5.2.1.3.1 The operations level responder shall identify the following information on a pipeline marker:

_____ (1) Emergency telephone number
_____ (2) Owner
_____ (3) Product

5.2.1.3.2 Given a pesticide label, the operations level responder shall identify each of the following pieces of information, then match the piece of information to its significance in surveying hazardous materials incidents:

_____ (1) Active ingredient
_____ (2) Hazard statement
_____ (3) Name of pesticide
_____ (4) Pest control product (PCP) number (in Canada)
_____ (5) Precautionary statement
_____ (6) Signal word

5.2.1.3.3 Given a label for a radioactive material, the operations level responder shall identify the type or category of label, contents, activity, transport index, and criticality safety index as applicable.

_____

5.2.1.4* The operations level responder shall identify and list the surrounding conditions that should be noted when a hazardous materials/WMD incident is surveyed.

_____

5.2.1.5 The operations level responder shall give examples of ways to verify information obtained from the survey of a hazardous materials/WMD incident.

_____

5.2.1.6* The operations level responder shall identify at least three additional hazards that could be associated with an incident involving terrorist or criminal activities.

_____

5.2.2 Collecting Hazard and Response Information. Given scenarios involving known hazardous materials/WMD, the operations level responder shall collect hazard and response information using MSDS, CHEMTREC/CANUTEC/SETIQ, governmental authorities, and shippers and manufacturers and shall meet the following requirements:

(1) Match the definitions associated with the UN/DOT hazard classes and divisions of hazardous materials/WMD, including refrigerated liquefied gases and cryogenic liquids, with the class or division.

_____ (2) Identify two ways to obtain an MSDS in an emergency.

(3) Using an MSDS for a specified material, identify the following hazard and response information:

_____ (a) Physical and chemical characteristics
_____ (b) Physical hazards of the material
_____ (c) Health hazards of the material
_____ (d) Signs and symptoms of exposure

_____ (e) Routes of entry
_____ (f) Permissible exposure limits
_____ (g) Responsible party contact
_____ (h) Precautions for safe handling (including hygiene practices, protective measures, and procedures for cleanup of spills and leaks)
_____ (i) Applicable control measures, including personal protective equipment
_____ (j) Emergency and first-aid procedures
_____ (4) Identify the following:
_____ (a) Type of assistance provided by CHEMTREC/CANUTEC/SETIQ and governmental authorities
_____ (b) Procedure for contacting CHEMTREC/CANUTEC/SETIQ and governmental authorities
_____ (c) Information to be furnished to CHEMTREC/CANUTEC/SETIQ and governmental authorities
_____ (5) Identify two methods of contacting the manufacturer or shipper to obtain hazard and response information.
_____ (6) Identify the type of assistance provided by governmental authorities with respect to criminal or terrorist activities involving the release or potential release of hazardous materials/WMD.
_____ (7) Identify the procedure for contacting local, state, and federal authorities as specified in the emergency response plan and/or standard operating procedures.
_____ (8)*Describe the properties and characteristics of the following:
_____ (a) Alpha radiation
_____ (b) Beta radiation
_____ (c) Gamma radiation
_____ (d) Neutron radiation

5.2.3* Predicting the Likely Behavior of a Material and Its Container. Given scenarios involving hazardous materials/WMD incidents, each with a single hazardous material/WMD, the operations level responder shall predict the likely behavior of the material or agent and its container and shall meet the following requirements:

(1) Interpret the hazard and response information obtained from the current edition of the DOT *Emergency Response Guidebook,* MSDS, CHEMTREC/CANUTEC/SETIQ, governmental authorities, and shipper and manufacturer contacts, as follows:

(a) Match the following chemical and physical properties with their significance and impact on the behavior of the container and its contents:

_____ i. Boiling point
_____ ii. Chemical reactivity
_____ iii. Corrosivity (pH)
_____ iv. Flammable (explosive) range [lower explosive limit (LEL) and upper explosive limit (UEL)]
_____ v. Flash point
_____ vi. Ignition (auto-ignition) temperature
_____ vii. Particle size
_____ viii. Persistence
_____ ix. Physical state (solid, liquid, gas)
_____ x. Radiation (ionizing and non-ionizing)
_____ xi. Specific gravity
_____ xii. Toxic products of combustion
_____ xiii. Vapor density
_____ xiv. Vapor pressure
_____ xv. Water solubility
_____ (b) Identify the differences between the following terms:
_____ i. *Contamination* and *secondary contamination*
_____ ii. *Exposure* and *contamination*
_____ iii. *Exposure* and *hazard*
_____ iv. *Infectious* and *contagious*
_____ v. *Acute effects* and *chronic effects*
_____ vi. *Acute exposures* and *chronic exposures*
_____ (2)*Identify three types of stress that can cause a container system to release its contents.
_____ (3)*Identify five ways in which containers can breach.
_____ (4)*Identify four ways in which containers can release their contents.
_____ (5)*Identify at least four dispersion patterns that can be created upon release of a hazardous material.
_____ (6)*Identify the time frames for estimating the duration that hazardous materials/WMD will present an exposure risk.
_____ (7)*Identify the health and physical hazards that could cause harm.
(8)*Identify the health hazards associated with the following terms:
_____ (a) Alpha, beta, gamma, and neutron radiation
_____ (b) Asphyxiant
_____ (c)*Carcinogen
_____ (d) Convulsant
_____ (e) Corrosive

_____ (f) Highly toxic
_____ (g) Irritant
_____ (h) Sensitizer, allergen
_____ (i) Target organ effects
_____ (j) Toxic

(9)*Given the following, identify the corresponding UN/DOT hazard class and division:

_____ (a) Blood agents
_____ (b) Biological agents and biological toxins
_____ (c) Choking agents
_____ (d) Irritants (riot control agents)
_____ (e) Nerve agents
_____ (f) Radiological materials
_____ (g) Vesicants (blister agents)

5.2.4* Estimating Potential Harm. Given scenarios involving hazardous materials/WMD incidents, the operations level responder shall estimate the potential harm within the endangered area at each incident and shall meet the following requirements:

(1)*Identify a resource for determining the size of an endangered area of
_____ a hazardous materials/WMD incident.

(2) Given the dimensions of the endangered area and the surrounding conditions at a hazardous materials/WMD incident, estimate the number
_____ and type of exposures within that endangered area.

(3) Identify resources available for determining the concentrations of a
_____ released hazardous material/WMD within an endangered area.

(4)*Given the concentrations of the released material, identify the factors for determining the extent of physical, health, and safety hazards within
_____ the endangered area of a hazardous materials/WMD incident.

(5) Describe the impact that time, distance, and shielding have on
_____ exposure to radioactive materials specific to the expected dose rate.

5.3 Core Competencies — Planning the Response.

5.3.1 Describing Response Objectives. Given at least two scenarios involving hazardous materials/WMD incidents, the operations level responder shall describe the response objectives for each example and shall meet the following requirements:

(1) Given an analysis of a hazardous materials/WMD incident and the exposures, determine the number of exposures that could be saved with
_____ the resources provided by the AHJ.

(2) Given an analysis of a hazardous materials/WMD incident, describe the steps for determining response objectives.

(3) Describe how to assess the risk to a responder for each hazard class in rescuing injured persons at a hazardous materials/WMD incident.

(4)*Assess the potential for secondary attacks and devices at criminal or terrorist events.

5.3.2 Identifying Action Options. Given examples of hazardous materials/WMD incidents (facility and transportation), the operations level responder shall identify the options for each response objective and shall meet the following requirements:

(1) Identify the options to accomplish a given response objective.

(2) Describe the prioritization of emergency medical care and removal of victims from the hazard area relative to exposure and contamination concerns.

5.3.3 Determining Suitability of Personal Protective Equipment.

Given examples of hazardous materials/WMD incidents, including the name of the hazardous material/WMD involved and the anticipated type of exposure, the operations level responder shall determine whether available personal protective equipment is applicable to performing assigned tasks and shall meet the following requirements:

(1)*Identify the respiratory protection required for a given response option and the following:

(a) Describe the advantages, limitations, uses, and operational components of the following types of respiratory protection at hazardous materials/WMD incidents:

i. Positive pressure self-contained breathing apparatus (SCBA)

ii. Positive pressure air-line respirator with required escape unit

iii. Closed-circuit SCBA

iv. Powered air-purifying respirator (PAPR)

v. Air-purifying respirator (APR)

vi. Particulate respirator

(b) Identify the required physical capabilities and limitations of personnel working in respiratory protection.

(2) Identify the personal protective clothing required for a given option and the following:

(a) Identify skin contact hazards encountered at hazardous materials/WMD incidents.

(b) Identify the purpose, advantages, and limitations of the following types of protective clothing at hazardous materials/WMD incidents:

i. Chemical-protective clothing: liquid splash–protective clothing and vapor-protective clothing

ii. High temperature–protective clothing: proximity suit and entry suits

iii. Structural fire-fighting protective clothing

5.3.4* Identifying Decontamination Issues. Given scenarios involving hazardous materials/WMD incidents, operations level responders shall identify when emergency decontamination is needed and shall meet the following requirements:

(1) Identify ways that people, personal protective equipment, apparatus, tools, and equipment become contaminated.

(2) Describe how the potential for secondary contamination determines the need for decontamination.

(3) Explain the importance and limitations of decontamination procedures at hazardous materials incidents.

(4) Identify the purpose of emergency decontamination procedures at hazardous materials incidents.

(5) Identify the factors that should be considered in emergency decontamination.

(6) Identify the advantages and limitations of emergency decontamination procedures.

5.4 Core Competencies — Implementing the Planned Response.

5.4.1 Establishing and Enforcing Scene Control Procedures.

Given two scenarios involving hazardous materials/WMD incidents, the operations level responder shall identify how to establish and enforce scene control, including control zones and emergency decontamination, and communications between responders and to the public and shall meet the following requirements:

(1) Identify the procedures for establishing scene control through control zones.

(2) Identify the criteria for determining the locations of the control zones at hazardous materials/WMD incidents.

(3) Identify the basic techniques for the following protective actions at hazardous materials/WMD incidents:

_____ (a) Evacuation

_____ (b) Sheltering-in-place

_____ (4)*Demonstrate the ability to perform emergency decontamination.

(5)*Identify the items to be considered in a safety briefing prior to allowing personnel to work at the following:

_____ (a) Hazardous material incidents

_____ (b)*Hazardous materials/WMD incidents involving criminal activities

_____ (6) Identify the procedures for ensuring coordinated communication between responders and to the public.

5.4.2* Preserving Evidence. Given two scenarios involving hazardous materials/WMD incidents, the operations level responder shall describe the process to preserve evidence as listed in the emergency response plan and/or standard operating procedures.

5.4.3* Initiating the Incident Command System. Given scenarios involving hazardous materials/WMD incidents, the operations level responder shall initiate the incident command system specified in the emergency response plan and/or standard operating procedures and shall meet the following requirements:

_____ (1) Identify the role of the operations level responder during hazardous materials/WMD incidents as specified in the emergency response plan and/or standard operating procedures.

_____ (2) Identify the levels of hazardous materials/WMD incidents as defined in the emergency response plan.

_____ (3) Identify the purpose, need, benefits, and elements of the incident command system for hazardous materials/WMD incidents.

(4) Identify the duties and responsibilities of the following functions within the incident management system:

_____ (a) Incident safety officer

_____ (b) Hazardous materials branch or group

_____ (5) Identify the considerations for determining the location of the incident command post for a hazardous materials/WMD incident.

_____ (6) Identify the procedures for requesting additional resources at a hazardous materials/WMD incident.

_____ (7) Describe the role and response objectives of other agencies that respond to hazardous materials/WMD incidents.

5.4.4 Using Personal Protective Equipment. The operations level responder shall describe considerations for the use of personal protective equipment provided by the AHJ, and shall meet the following requirements:

_____ (1) Identify the importance of the buddy system.

_____ (2) Identify the importance of the backup personnel.

_____ (3) Identify the safety precautions to be observed when approaching and working at hazardous materials/WMD incidents.

_____ (4) Identify the signs and symptoms of heat and cold stress and procedures for their control.

_____ (5) Identify the capabilities and limitations of personnel working in the personal protective equipment provided by the AHJ.

_____ (6) Identify the procedures for cleaning, disinfecting, and inspecting personal protective equipment provided by the AHJ.

_____ (7) Describe the maintenance, testing, inspection, and storage procedures for personal protective equipment provided by the AHJ according to the manufacturer's specifications and recommendations.

5.5 Core Competencies — Evaluating Progress.

5.5.1 Evaluating the Status of Planned Response. Given two scenarios involving hazardous materials/WMD incidents, including the incident action plan, the operations level responder shall evaluate the status of the actions taken in accomplishing the response objectives and shall meet the following requirements:

_____ (1) Identify the considerations for evaluating whether actions taken were effective in accomplishing the objectives.

_____ (2) Describe the circumstances under which it would be prudent to withdraw from a hazardous materials/WMD incident.

5.5.2 Communicating the Status of the Planned Response.

Given two scenarios involving hazardous materials/WMD incidents, including the incident action plan, the operations level responder shall communicate the status of the planned response through the normal chain of command and shall meet the following requirements:

_____ (1) Identify the methods for communicating the status of the planned response through the normal chain of command.

_____ (2) Identify the methods for immediate notification of the incident commander and other response personnel about critical emergency conditions at the incident.

APPENDIX B

TECHNICIAN LEVEL COMPETENCIES

7.1.1.1 The hazardous materials technician shall be that person who responds to hazardous materials/WMD incidents using a risk-based response process by which he or she analyzes a problem involving hazardous materials/WMD, selects applicable decontamination procedures, and controls a release using specialized protective clothing and control equipment *[see 7.1.2.2(1)]*.

7.1.1.2 The hazardous materials technician shall be trained to meet all competencies at the awareness level (Chapter 4), all core competencies at the operations level (Chapter 5), and all competencies of this chapter.

7.1.1.4 The hazardous materials technician shall be permitted to have additional competencies that are specific to the response mission, expected tasks, and equipment and training as determined by the AHJ.

7.1.2 Goal.

7.1.2.1 The goal of the competencies at this level shall be to provide the hazardous materials technician with the knowledge and skills to perform the tasks in 7.1.2.2 safely.

7.1.2.2 In addition to being competent at both the awareness and the operations levels, the hazardous materials technician shall be able to perform the following tasks:

(1) Analyze a hazardous materials/WMD incident to determine the complexity of the problem and potential outcomes by completing the following tasks:

(a) Survey the hazardous materials/WMD incident to identify special containers involved, to identify or classify unknown materials, and to verify the presence and concentrations of hazardous materials through the use of monitoring equipment.

(b) Collect and interpret hazard and response information from printed and technical resources, computer databases, and monitoring equipment.

(c) Describe the type and extent of damage to containers.

(d) Predict the likely behavior of released materials and their containers when multiple materials are involved.

(e) Estimate the size of an endangered area using computer modeling, monitoring equipment, or specialists in this field.

(2) Plan a response within the capabilities of available personnel, personal protective equipment, and control equipment by completing the following tasks:

_____ (a) Describe the response objectives for hazardous materials/WMD incidents.

_____ (b) Describe the potential response options available by response objective.

_____ (c) Select the personal protective equipment required for a given action option.

_____ (d) Select a technical decontamination process to minimize the hazard.

_____ (e) Develop an incident action plan for a hazardous materials/WMD incident, including a site safety and control plan, consistent with the emergency response plan or standard operating procedures and within the capability of the available personnel, personal protective equipment, and control equipment

(3)*Implement the planned response to favorably change the outcomes consistent with the standard operating procedures and site safety and control plan by completing the following tasks:

_____ (a) Perform the duties of an assigned hazardous materials branch or group position within the local incident management system (IMS).

_____ (b) Don, work in, and doff personal protective clothing, including, but not limited to, both liquid splash– and vapor–protective clothing with correct respiratory protection.

_____ (c) Perform the control functions identified in the incident action plan.

_____ (d) Perform the decontamination functions identified in the incident action plan

(4) Evaluate the progress of the planned response by completing the following tasks:

_____ (a) Evaluate the effectiveness of the control functions.

_____ (b) Evaluate the effectiveness of the decontamination process.

(5) Terminate the incident by completing the following tasks:

_____ (a) Assist in the incident debriefing.

_____ (b) Assist in the incident critique.

_____ (c) Provide reports and documentation of the incident.

7.2 Competencies —Analyzing the Incident.

7.2.1 Surveying Hazardous Materials/WMD Incidents. Given examples of hazardous materials/WMD incidents, the hazardous materials technician shall identify containers involved and, given the necessary equipment, identify or classify unknown materials involved, verify the identity of the hazardous materials/WMD involved, determine the concentration of hazardous materials, and shall meet the requirements of 7.2.1.1 through 7.2.1.5.

7.2.1.1 Given examples of various containers for hazardous materials/WMD, the hazardous materials technician shall identify each container by name and specification and identify the typical contents by name and hazard class.

7.2.1.1.1 Given examples of the following railroad cars, the hazardous materials technician shall identify the container by name and specification and identify the typical contents by name and hazard class:

(1) Cryogenic liquid tank cars

(2) Nonpressure tank cars

(3) Pneumatically unloaded hopper cars

(4) Pressure tank cars

7.2.1.1.2 Given examples of the following intermodal tanks, the hazardous materials technician shall identify the container by name and specification and identify the typical contents by name and hazard class:

(1) Nonpressure intermodal tanks

(a) IM-101 portable tanks (IMO Type 1 internationally)

(b) IM-102 portable tanks (IMO Type 2 internationally)

(2) Pressure intermodal tank (DOT Specification 51; IMO Type 5 internationally)

(3) Specialized intermodal tanks

(a) Cryogenic intermodal tanks (DOT Specification 51; IMO Type 7 internationally)

(b) Tube modules

7.2.1.1.3 Given examples of the following cargo tanks, the hazardous materials technician shall identify the container by name and specification and identify the typical contents by name and hazard class:

(1) Compressed gas tube trailers

(2) Corrosive liquid tanks

(3) Cryogenic liquid tanks

(4) Dry bulk cargo tanks

_____ (5) High-pressure tanks
_____ (6) Low-pressure chemical tanks
_____ (7) Nonpressure liquid tanks

7.2.1.1.4 Given examples of the following facility storage tanks, the hazardous materials technician shall identify the container by name and identify the typical contents by name and hazard class:

_____ (1) Cryogenic liquid tank
_____ (2) Nonpressure tank
_____ (3) Pressure tank

7.2.1.1.5 Given examples of the following nonbulk packaging, the hazardous materials technician shall identify the package by name and identify the typical contents by name and hazard class:

_____ (1) Bags
_____ (2) Carboys
_____ (3) Cylinders
_____ (4) Drums

7.2.1.1.6 Given examples of the following radioactive materials packages, the hazardous materials technician shall identify the container/package by name and identify the typical contents by name:

_____ (1) Excepted
_____ (2) Industrial
_____ (3) Type A
_____ (4) Type B
_____ (5) Type C

7.2.1.2 Given examples of three facility and three transportation containers, the hazardous materials technician shall identify the
_____ approximate capacity of each container.

7.2.1.2.1 Using the markings on the container, the hazardous materials technician shall identify the capacity (by weight or volume) of the following examples of transportation vehicles:

_____ (1) Cargo tanks
_____ (2) Tank cars
_____ (3) Tank containers

7.2.1.2.2 Using the markings on the container and other available resources, the hazardous materials technician shall identify the capacity (by weight or volume) of each of the following facility containers:

_____ (1) Cryogenic liquid tank
_____ (2) Nonpressure tank (general service or low-pressure tank)

_____ (3) Pressure tank

7.2.1.3* Given at least three unknown hazardous materials/WMD, one of which is a solid, one a liquid, and one a gas, the hazardous materials technician shall identify or classify by hazard each unknown material.

7.2.1.3.1 The hazardous materials technician shall identify the steps in an analysis process for identifying unknown solid and liquid materials.

7.2.1.3.2 The hazardous materials technician shall identify the steps in an analysis process for identifying an unknown atmosphere.

7.2.1.3.3 The hazardous materials technician shall identify the type(s) of monitoring technology used to determine the following hazards:

_____ (1) Corrosivity
_____ (2) Flammability
_____ (3) Oxidation potential
_____ (4) Oxygen deficiency
_____ (5) Pathogenicity
_____ (6) Radioactivity
_____ (7) Toxicity

7.2.1.3.4* The hazardous materials technician shall identify the capabilities and limiting factors associated with the selection and use of the following monitoring equipment, test strips, and reagents:

_____ (1) Biological immunoassay indicators
_____ (2) Chemical agent monitors (CAMs)
_____ (3) Colorimetric indicators [colorimetric detector tubes, indicating papers (pH paper and meters), reagents, test strips]
_____ (4) Combustible gas indicator
_____ (5) DNA fluoroscopy
_____ (6) Electrochemical cells (carbon monoxide meter, oxygen meter)
_____ (7) Flame ionization detector
_____ (8) Gas chromatograph/mass spectrometer (GC/MS)
_____ (9) Infrared spectroscopy
_____ (10) Ion mobility spectroscopy
_____ (11) Mass channel analyzer
_____ (12) Metal oxide sensor
_____ (13) Photo ionization detectors
_____ (14) Polymerase chain reaction (PCR)
_____ (15) Radiation detection and measurement instruments
_____ (16) Raman spectroscopy
_____ (17) Surface acoustical wave (SAW)

_____ (18) Wet chemistry

7.2.1.3.5* Given three hazardous materials/WMD, one of which is a solid, one a liquid, and one a gas, and using the following monitoring equipment, test strips, and reagents, the hazardous materials technician shall select from the following equipment and demonstrate the correct techniques to identify the hazards (corrosivity, flammability, oxidation potential, oxygen deficiency, radioactivity, toxicity, and pathogenicity):

_____ (1) Carbon monoxide meter
_____ (2) Colorimetric tubes
_____ (3) Combustible gas indicator
_____ (4) Oxygen meter
_____ (5) Passive dosimeters
_____ (6) pH indicators and pH meters
_____ (7) Photo ionization and flame ionization detectors
_____ (8) Radiation detection instruments
_____ (9) Reagents
_____ (10) Test strips
_____ (11) WMD detectors (chemical and biological)
_____ (12) Other equipment provided by the AHJ

7.2.1.3.6 Given monitoring equipment, test strips, and reagents provided by the AHJ, the hazardous materials technician shall demonstrate the field maintenance and testing procedures for those

_____ items.

7.2.1.4* Given a label for a radioactive material, the hazardous materials technician shall identify the type or category of label, contents, activity, transport index, and criticality safety index as applicable, then describe the radiation dose rates associated with each

_____ label.

7.2.1.5 The hazardous materials technician shall demonstrate methods for collecting samples of the following:

_____ (1) Gas
_____ (2) Liquid
_____ (3) Solid

_____ **7.2.2 Collecting and Interpreting Hazard and Response Information.**

Given access to printed and technical resources, computer databases, and monitoring equipment, the hazardous materials technician shall collect and interpret hazard and response information not available from the current edition of the DOT *Emergency Response Guidebook* or an MSDS and shall meet the requirements of 7.2.2.1 through 7.2.2.6.

_____ **7.2.2.1*** The hazardous materials technician shall identify and interpret the types of hazard and response information available from each of the following resources and explain the advantages and disadvantages of each resource:

_____ (1) Hazardous materials databases
_____ (2) Monitoring equipment
_____ (3) Reference manuals
_____ (4) Technical information centers (i.e., CHEMTREC/CANUTEC/SETIQ and local, state, and federal authorities)
_____ (5) Technical information specialists

7.2.2.2 The hazardous materials technician shall describe the following terms and explain their significance in the analysis process:

_____ (1) Acid, caustic
_____ (2) Air reactivity
_____ (3) Auto-refrigeration
_____ (4) Biological agents and biological toxins
_____ (5) Blood agents
_____ (6) Boiling point
_____ (7) Catalyst
_____ (8) Chemical change
_____ (9) Chemical interactions
_____ (10) Compound, mixture
_____ (11) Concentration
_____ (12) Critical temperature and pressure
_____ (13) Dissociation and corrosivity
_____ (14) Dose
_____ (15) Dose response
_____ (16) Expansion ratio
_____ (17) Fire point
_____ (18) Flammable (explosive) range (LEL and UEL)
_____ (19) Flash point
_____ (20) Half-life
_____ (21) Halogenated hydrocarbon
_____ (22) Ignition (auto ignition) temperature
_____ (23) Inhibitor

_____ (24) Instability
_____ (25) Ionic and covalent compounds
_____ (26) Irritants (riot control agents)
_____ (27) Maximum safe storage temperature (MSST)
_____ (28) Melting point and freezing point
_____ (29) Miscibility
_____ (30) Nerve agents
_____ (31) Organic and inorganic
_____ (32) Oxidation potential
_____ (33) Persistence
_____ (34) pH
_____ (35) Physical change
_____ (36) Physical state (solid, liquid, gas)
_____ (37) Polymerization
_____ (38) Radioactivity
_____ (39) Reactivity
_____ (40) Riot control agents
_____ (41) Saturated, unsaturated (straight and branched), and aromatic hydrocarbons
_____ (42) Self-accelerating decomposition temperature (SADT)
_____ (43) Solubility
_____ (44) Solution and slurry
_____ (45) Specific gravity
_____ (46) Strength
_____ (47) Sublimation
_____ (48) Temperature of product
_____ (49) Toxic products of combustion
_____ (50) Vapor density
_____ (51) Vapor pressure
_____ (52) Vesicants (blister agents)
_____ (53) Viscosity
_____ (54) Volatility

_____ **7.2.2.3** The hazardous materials technician shall describe the heat transfer processes that occur as a result of a cryogenic liquid spill.

_____ **7.2.2.4*** Given five hazardous materials/WMD scenarios and the associated reference materials, the hazardous materials technician shall identify the signs and symptoms of exposure to each material and the target organ effects of exposure to that material.

_____ **7.2.2.5** The hazardous materials technician shall identify two methods for determining the pressure in bulk packaging or facility containers.

7.2.2.6 The hazardous materials technician shall identify one method for determining the amount of lading remaining in damaged bulk packaging or facility containers.

7.2.3* Describing the Condition of the Container Involved in the Incident.

Given examples of container damage, the hazardous materials technician shall describe the damage and shall meet the related requirements of 7.2.3.1 through 7.2.3.5.

7.2.3.1* Given examples of containers, including the DOT specification markings for nonbulk and bulk packaging, and associated reference guides, the hazardous materials technician shall identify the basic design and construction features of each container.

7.2.3.1.1 The hazardous materials technician shall identify the basic design and construction features, including closures, of the following bulk containers:

(1) Cargo tanks

(a) Compressed gas tube trailers

(b) Corrosive liquid tanks

(c) Cryogenic liquid tanks

(d) Dry bulk cargo tanks

(e) High-pressure tanks

(f) Low-pressure chemical tanks

(g) Nonpressure liquid tanks

(2) Fixed facility tanks

(a) Cryogenic liquid tanks

(b) Nonpressure tanks

(c) Pressure tanks

(3) Intermediate bulk containers (also known as tote tanks)

(4) Intermodal tanks

(a) Nonpressure intermodal tanks

i. IM-101 portable tank (IMO Type 1 internationally)

ii. IM-102 portable tank (IMO Type 2 internationally)

(b) Pressure intermodal tanks (DOT Specification 51; IMO Type 5 internationally)

(c) Specialized intermodal tanks

i. Cryogenic intermodal tanks (DOT Specification 51; IMO Type 7 internationally)

ii. Tube modules

(5) One-ton containers (pressure drums)

(6) Pipelines

(7) Railroad cars

_____ (a) Cryogenic liquid tank cars
_____ (b) Nonpressure tank cars
_____ (c) Pneumatically unloaded hopper cars
_____ (d) Pressure tank cars

7.2.3.1.2 The hazardous materials technician shall identify the basic design and construction features, including closures of the following nonbulk containers:

_____ (1) Bags
_____ (2) Carboys
_____ (3) Drums
_____ (4) Cylinders

7.2.3.1.3 The hazardous materials technician shall identify the basic design features and testing requirements on the following radioactive materials packages:

_____ (1) Excepted
_____ (2) Industrial
_____ (3) Type A
_____ (4) Type B
_____ (5) Type C

_____ **7.2.3.2** The hazardous materials technician shall describe how a liquid petroleum product pipeline can carry different products.

7.2.3.3 Given an example of a pipeline, the hazardous materials technician shall identify the following:

_____ (1) Ownership of the line
_____ (2) Procedures for checking for gas migration
_____ (3) Procedure for shutting down the line or controlling the leak
_____ (4) Type of product in the line

_____ **7.2.3.4*** Given examples of container stress or damage, the hazardous materials technician shall identify the type of damage in each example and assess the level of risk associated with the damage.

_____ **7.2.3.5** Given a scenario involving radioactive materials, the hazardous materials technician, using available survey and monitoring equipment, shall determine if the integrity of any container has been breached.

7.2.4 Predicting Likely Behavior of Materials and Their Containers Where Multiple Materials Are Involved. Given examples of hazardous materials/WMD incidents involving multiple hazardous materials or WMD, the hazardous materials technician shall predict the likely behavior of the material in each case and meet the requirements of 7.2.4.1 through 7.2.4.3.

_____ **7.2.4.1** The hazardous materials technician shall identify at least three resources available that indicate the effects of mixing various hazardous materials.

7.2.4.2 The hazardous materials technician shall identify the impact of the following fire and safety features on the behavior of the products during an incident at a bulk liquid facility and explain their significance in the analysis process:

_____ (1) Fire protection systems
_____ (2) Monitoring and detection systems
_____ (3) Pressure relief and vacuum relief protection
_____ (4) Product spillage and control (impoundment and diking)
_____ (5) Tank spacing
_____ (6) Transfer operations

7.2.4.3 The hazardous materials technician shall identify the impact of the following fire and safety features on the behavior of the products during an incident at a bulk gas facility and explain their significance in the analysis process:

_____ (1) Fire protection systems
_____ (2) Monitoring and detection systems
_____ (3) Pressure relief protection
_____ (4) Transfer operations

7.2.5 Estimating the Likely Size of an Endangered Area. Given examples of hazardous materials/WMD incidents, the hazardous materials technician shall estimate the likely size, shape, and concentrations associated with the release of materials involved in an incident by using computer modeling, monitoring equipment, or specialists in this field and shall meet the requirements of 7.2.5.1 through 7.2.5.4.

_____ **7.2.5.1** Given the emergency response plan, the hazardous materials technician shall identify resources for dispersion pattern prediction and modeling, including computers, monitoring equipment, or specialists in the field.

_____ **7.2.5.2** Given the quantity, concentration, and release rate of a material, the hazardous materials technician shall identify the steps for determining the likely extent of the physical, safety, and health hazards within the endangered area of a hazardous materials/WMD incident.

7.2.5.2.1 The hazardous materials technician shall describe the following terms and exposure values and explain their significance in the analysis process:

_____ (1) Counts per minute (cpm) and kilocounts per minute (kcpm)
_____ (2) Immediately dangerous to life and health (IDLH) value
_____ (3) Incubation period
_____ (4) Infectious dose
_____ (5) Lethal concentrations (LC50)
_____ (6) Lethal dose (LD50)

_____ (7) Parts per billion (ppb)
_____ (8) Parts per million (ppm)
_____ (9) Permissible exposure limit (PEL)
_____ (10) Radiation absorbed dose (rad)
_____ (11) Roentgen equivalent man (rem), millirem (mrem), microrem (µrem)
_____ (12) Threshold limit value ceiling (TLV-C)
_____ (13) Threshold limit value short-term exposure limit (TLVSTEL)
_____ (14) Threshold limit value time-weighted average (TLV-TWA)

7.2.5.2.2 The hazardous materials technician shall identify two methods for predicting the areas of potential harm within the
_____ endangered area of a hazardous materials/WMD incident.

7.2.5.3* The hazardous materials technician shall identify the steps for estimating the outcomes within an endangered area of a hazardous
_____ materials/WMD incident.

7.2.5.4 Given three examples involving a hazardous materials/WMD release and the corresponding instrument monitoring readings, the hazardous materials technician shall determine the applicable public
_____ protective response options and the areas to be protected.

7.3 Competencies — Planning the Response.

7.3.1 Identifying Response Objectives.

7.3.1.1 Given scenarios involving hazardous materials/WMD incidents, the hazardous materials technician shall describe the response
_____ objectives for each problem.

7.3.1.2 Given an analysis of a hazardous materials/WMD incident, the hazardous materials technician shall be able to describe the steps for determining response objectives (defensive, offensive, and
_____ nonintervention).

7.3.2 Identifying the Potential Response Options.

7.3.2.1 Given scenarios involving hazardous materials/WMD incidents, the hazardous materials technician shall identify the possible response options (defensive, offensive, and nonintervention) by response
_____ objective for each problem.

7.3.2.2 The hazardous materials technician shall be able to identify the
_____ possible response options to accomplish a given response objective.

7.3.3 Selecting Personal Protective Equipment. Given scenarios of hazardous materials/WMD incidents with known and unknown hazardous materials/WMD, the hazardous materials technician shall determine the personal protective equipment for the response options specified in the incident action plan in each situation and shall meet the
_____ requirements of 7.3.3.1 through 7.3.3.4.7.

7.3.3.1 The hazardous materials technician shall identify and describe the four levels of personal protective equipment as specified by the
_____ Environmental Protection Agency (EPA) and the National Institute for

Occupational Safety and Health (NIOSH).

_____ **7.3.3.2** The hazardous materials technician shall identify and describe personal protective equipment options available for the following hazards:

_____ (1) Thermal

_____ (2) Radiological

_____ (3) Asphyxiating

_____ (4) Chemical (liquids and vapors)

_____ (5) Etiological (biological)

_____ (6) Mechanical (explosives)

_____ **7.3.3.3** The hazardous materials technician shall identify the process to be considered in selecting respiratory protection for a specified action option.

_____ **7.3.3.4** The hazardous materials technician shall identify the factors to be considered in selecting chemical-protective clothing for a specified action option.

_____ **7.3.3.4.1** The hazardous materials technician shall describe the following terms and explain their impact and significance on the selection of chemical-protective clothing:

_____ (1) Degradation

_____ (2) Penetration

_____ (3) Permeation

_____ **7.3.3.4.2** The hazardous materials technician shall identify at least three indications of material degradation of chemical protective clothing.

_____ **7.3.3.4.3*** The hazardous materials technician shall identify the different designs of vapor-protective and splash-protective clothing and describe the advantages and disadvantages of each type.

_____ **7.3.3.4.4** The hazardous materials technician shall identify the relative advantages and disadvantages of the following heat exchange units used for the cooling of personnel in personal protective equipment:

_____ (1) Air cooled

_____ (2) Ice cooled

_____ (3) Water cooled

_____ (4) Phase change cooling technology

_____ **7.3.3.4.5** The hazardous materials technician shall identify the process for selecting protective clothing at hazardous materials/WMD incidents.

_____ **7.3.3.4.6** Given three examples of various hazardous materials, the hazardous materials technician shall determine the protective clothing construction materials for a given action option using chemical compatibility charts.

7.3.3.4.7 The hazardous materials technician shall identify the physiological and psychological stresses that can affect users of personal protective equipment.

7.3.4 Selecting Decontamination Procedures. Given a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall select a decontamination procedure that will minimize the hazard, shall determine the equipment required to implement that procedure, and shall complete the following tasks:

(1) Describe the advantages and limitations of each of the following decontamination methods:

(a) Absorption

(b) Adsorption

(c) Chemical degradation

(d) Dilution

(e) Disinfecting

(f) Evaporation

(g) Isolation and disposal

(h) Neutralization

(i) Solidification

(j) Sterilization

(k) Vacuuming

(l) Washing

(2) Identify three sources of information for determining the applicable decontamination procedure and identify how to access those resources in a hazardous materials/WMD incident.

7.3.5 Developing a Plan of Action. Given scenarios involving hazardous materials/WMD incidents, the hazardous materials technician shall develop a plan of action, including site safety and a control plan, that is consistent with the emergency response plan and standard operating procedures and within the capability of available personnel, personal protective equipment, and control equipment for that incident, and shall meet the requirements of 7.3.5.1 through 7.3.5.5.

7.3.5.1 The hazardous materials technician shall describe the purpose of, procedures for, equipment required for, and safety precautions used with the following techniques for hazardous materials/WMD control:

(1) Absorption

(2) Adsorption

(3) Blanketing

(4) Covering

(5) Damming

(6) Diking

_____ (7) Dilution
_____ (8) Dispersion
_____ (9) Diversion
_____ (10) Fire suppression
_____ (11) Neutralization
_____ (12) Overpacking
_____ (13) Patching
_____ (14) Plugging
_____ (15) Pressure isolation and reduction (flaring; venting; vent and burn; isolation of valves, pumps, or energy sources)
_____ (16) Retention
_____ (17) Solidification
_____ (18) Transfer
_____ (19) Vapor control (dispersion, suppression)

7.3.5.2 Given a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall develop the incident
_____ action plan.

7.3.5.2.1 The hazardous materials technician shall list and describe the
_____ safety considerations to be included.

7.3.5.2.2 The hazardous materials technician shall identify the points
_____ that should be made in a safety briefing prior to working at the scene.

7.3.5.3* The hazardous materials technician shall identify the atmospheric and physical safety hazards associated with hazardous
_____ materials/WMD incidents involving confined spaces.

7.3.5.4 The hazardous materials technician shall identify the pre-entry
_____ activities to be performed.

7.3.5.5 The hazardous materials technician shall identify the procedures, equipment, and safety precautions for preserving and
_____ collecting legal evidence at hazardous materials /WMD incidents.

_____ **7.4 Competencies — Implementing the Planned Response.**

7.4.1* Performing Incident Command Duties. Given the emergency response plan or standard operating procedures and a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall demonstrate the duties of an assigned function in the hazardous materials branch or group within the incident command system and shall identify the role of the hazardous materials
_____ technician during hazardous materials/WMD incidents.

7.4.2 Using Protective Clothing and Respiratory Protection. The hazardous materials technician shall demonstrate the ability to don, work in, and doff liquid splash–protective, vapor-protective, and chemical-protective clothing and any other specialized personal protective equipment provided by the AHJ, including respiratory

protection, and shall complete the following tasks:

(1) Describe three safety procedures for personnel working in
_____ chemical-protective clothing.
(2)*Describe three emergency procedures for personnel working in
_____ chemical-protective clothing.
(3) Demonstrate the ability to don, work in, and doff self-contained breathing apparatus in addition to any other respiratory protection
_____ provided by the AHJ.
(4) Demonstrate the ability to don, work in, and doff liquid splash–protective, vapor-protective, and chemical protective clothing in addition to any other specialized protective equipment provided by the
_____ AHJ.

7.4.3 Performing Control Functions Identified in Incident Action Plan. Given scenarios involving hazardous materials/WMD incidents, the hazardous materials technician shall select the tools, equipment, and materials for the control of hazardous materials/WMD incidents and identify the precautions for controlling releases from the packaging/containers and shall complete the following tasks:

(1)*Given a pressure vessel, select the material or equipment and demonstrate a method(s) to contain leaks from the following locations:
_____ (a) Fusible plug
_____ (b) Fusible plug threads
_____ (c) Side wall of cylinder
_____ (d) Valve blowout
_____ (e) Valve gland
_____ (f) Valve inlet threads
_____ (g) Valve seat
_____ (h) Valve stem assembly blowout

(2)*Given the fittings on a pressure container, demonstrate the ability to perform the following:
_____ (a) Close valves that are open
_____ (b) Replace missing plugs
_____ (c) Tighten loose plugs

(3) Given a 55 gal drum and applicable tools and materials, demonstrate the ability to contain the following types of leaks:
_____ (a) Bung leak
_____ (b) Chime leak
_____ (c) Forklift puncture
_____ (d) Nail puncture

(4) Given a 55 gal drum and an overpack drum, demonstrate the ability to place the 55 gal drum into the overpack drum using the following methods:

_____ (a) Rolling slide-in

_____ (b) Slide-in

_____ (c) Slip-over

_____ (5) Identify the maintenance and inspection procedures for the tools and equipment provided for the control of hazardous materials releases according to the manufacturer's specifications and recommendations.

_____ (6) Identify three considerations for assessing a leak or spill inside a confined space without entering the area.

_____ (7)*Identify three safety considerations for product transfer operations.

_____ (8) Given an MC-306/DOT-406 cargo tank and a dome cover clamp, demonstrate the ability to install the clamp on the dome.

_____ (9) Identify the methods and precautions used to control a fire involving an MC-306/DOT-406 aluminum shell cargo tank.

_____ (10) Describe at least one method for containing each of the following types of leaks in MC-306/DOT-406, MC-307/DOT-407, and MC-312/DOT-412 cargo tanks:

_____ (a) Dome cover leak

_____ (b) Irregular-shaped hole

_____ (c) Puncture

_____ (d) Split or tear

_____ (11)*Describe three product removal and transfer considerations for overturned MC-306/DOT-406, MC-307/DOT-407, MC-312/DOT-412, MC-331, and MC-338 cargo tanks.

_____ **7.4.4** Given MC-306/DOT-406, MC-307/DOT-407, MC-312/DOT-412, MC-331, and MC-338 cargo tanks, the hazardous materials technician shall identify the common methods for product transfer from each type of cargo tank.

_____ **7.4.5* Performing Decontamination Operations Identified in the Incident Action Plan.** The hazardous materials technician shall demonstrate the ability to set up and implement the following types of decontamination operations:

_____ (1) Technical decontamination operations in support of entry operations

_____ (2) Technical decontamination operations involving ambulatory and nonambulatory victims

_____ (3) Mass decontamination operations involving ambulatory and nonambulatory victims

_____ **7.5 Competencies — Evaluating Progress.**

_____ **7.5.1 Evaluating the Effectiveness of the Control Functions.**

Given scenarios involving hazardous materials/WMD incidents and the incident action plan, the hazardous materials technician shall evaluate the effectiveness of any control functions identified in the incident action plan.

7.5.2 Evaluating the Effectiveness of the Decontamination Process. Given an incident action plan for a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall evaluate the effectiveness of any decontamination procedures identified in the incident action plan.

7.6 Competencies — Terminating the Incident.

7.6.1 Assisting in the Debriefing. Given a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall participate in the debriefing of the incident and shall meet the following requirements:

(1) Describe three components of an effective debriefing.

(2) Describe the key topics of an effective debriefing.

(3) Describe when a debriefing should take place.

(4) Describe who should be involved in a debriefing.

7.6.2 Assisting in the Incident Critique. Given a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall provide operational observations of the activities that were performed in the hot and warm zones during the incident and shall complete the following tasks:

(1) Describe three components of an effective critique.

(2) Describe who should be involved in a critique.

(3) Describe why an effective critique is necessary after a hazardous materials/WMD incident.

(4) Describe which written documents should be prepared as a result of the critique.

7.6.3 Reporting and Documenting the Incident. Given a scenario involving a hazardous materials/WMD incident, the hazardous materials technician shall complete the reporting and documentation requirements consistent with the emergency response plan or standard operating procedures and shall meet the following requirements:

(1) Identify the reports and supporting documentation required by the emergency response plan or standard operating procedures.

(2) Demonstrate completion of the reports required by the emergency response plan or standard operating procedures.

(3) Describe the importance of personnel exposure records.

(4) Describe the importance of debriefing records.

(5) Describe the importance of critique records.

(6) Identify the steps in keeping an activity log and exposure records.

_____ (7) Identify the steps to be taken in compiling incident reports that meet federal, state, local, and organizational requirements.

_____ (8) Identify the requirements for compiling hot zone entry and exit logs.

_____ (9) Identify the requirements for compiling personal protective equipment logs.

_____ (10) Identify the requirements for filing documents and maintaining records.

Resource Typing: Resource typing is the categorization and description of resources that are commonly exchanged in disasters via mutual aid, by capacity and/or capability. Through resource typing, disciplines examine resources and identify the capabilities of a resource's components (i.e., personnel, equipment, training). Resource typing definitions help define resource capabilities for ease of ordering and mobilization during a disaster. As a result of the resource typing process, a resource's capability is readily defined and an emergency manager is able to effectively and efficiently request and receive resources through mutual aid during times of disaster.

IMPORTANT: Before taking this survey you must download the Suggested AEL. It provides important information that you will need to take this survey. Particularly it defines the three types of hazmat teams and equipment requirements.
This survey just asks if you have the equipment or personnel to perform the functions stated. It does not state any equipment or personnel requirements.

This survey is divided into 3-main sections. These main sections are green in color and are titled *Activity*. Below each main section is a sub-section titled Critical Tasks. This sub-section is ***what*** your team should be able to perform. The last sub-section titled Preparedness Measures is ***how*** your team performs the Critical Tasks. In other words, you must be able to perform the Performance Measures to be proficient in the Critical Tasks. The only section of this survey that requires action on your part is the Performance Measures section.

Each line in the Performance Measures section is a capability which your hazmat team should be able to perform. You only need to **answer each question with either Type I, Type II, Type III or No**. Your answer should reflect your team's capabilities as described in the Indiana Hazardous Materials Team Qualification Program. If your answer is No, you do not meet the requirements of a Type I, II or III, then please explain what is required for you to meet the desired level of capability in the box provided.

THIS FILE IS BEST VIEWED WHEN PRINTED ON 8.5" X 14" PAPER

HAZARDOUS MATERIALS TEAM CAPABILITIES ASSESSMENT ESF #10

Activity: ***Develop and Maintain Plans, Procedures, Programs, and Systems***
Critical Tasks
Develop plans, programs, agreements, and requirements for responding to hazardous material incidents
Develop plans, programs, criteria, and protocols for conducting decontamination
Pre-identify resources (personnel and equipment) to provide rapid initial size- up of hazardous materials incident
Assist in developing a communications plan for hazardous materials in emergencies, related to specific hazards, health guidance, educational materials, etc.

Ensure plans are in place for self-presenting contaminated victims off-site (e.g., hospitals)						
Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**
WMD/HazMat Response and Decontamination plans are based on a formal assessment of risks and vulnerabilities.	Plans Review	Plans need to be available and reviewed annually	Plans need to be available and reviewed annually	Plans need to be available and reviewed annually		
Plans for pre-identified and equipped hazmat personnel to respond to hazmat incident and provide initial rapid hazmat incident size-up are in place	Plans and Procedure	Within 30 minutes from notification (<2hrs if regional resource)	Within 30 minutes from notification (<2hrs if regional resource)	Within 30 minutes from notification (<2hrs if regional resource)		
Hazmat personnel are equipped and trained for weather prediction and hazard pluming	Technical Reference	Same as Type II plus:WMD Chem/Bio	Same as Type III plus:(Plume Air Modeling; MapOverlays)At a minimum, technicalreferences will have theability to outsource additionalcapabilities and have onesource for air-modelingcapability	(Printed and Electronic) Access to and use of various databases, chemical substance data depositories, and other guidelines and safety data sheets, either in print format, electronic format, stand-alone computer programs, or data available via telecommunications. The interpretation of data collected from electronic sources		
WMD/HazMat plans address personnel needs (e.g. work/rest cycles, medical, psychological, financial assistance, etc.).	Sustainability	Same as Type II	Known or Suspect Weapons	Capability to Perform Three (3) Entries in a 24-hour Period		
Jurisdiction's hazmat team(s) has current protocol to coordinate with emergency medical services (EMS) on victim care post-decontamination (identification of substance, administration of antidotes, etc.)	Written Agreements	Same as Type II	of Mass Destruction	This requires written protocols, policies and procedures. In addition, the jurisdictional hazmat team shall have a written agreement with the jurisdictional EMS agency to provide EMS support. This shall be exercised annually.		

Redundant hazmat response teams and equipment are available (or accessible through mutual aid agreements) to provide resiliency in the event of a large-scale incident	Written Agreements	Same as Type II	Chemical/Biological	Written agreements with outside agency's are in-place to provide personnel and equipment assistance		
Jurisdiction's hazmat team(s) has current protocol to coordinate with law enforcement for evidence collection and crime scene control	Written Agreements	Same as Type II	Substances [WMD	This requires written protocols, policies and procedures. In addition, the jurisdictional hazmat team shall have a written agreement with the jurisdictional LE agency to provide LE support. This shall be exercised annually.		
Emergency response and command vehicles and Incident Command Posts are equipped with Emergency Response Guidebook, NIOSH pocket guidebook, and discipline-related references relevant to the region	Technical Reference	Same as Type II	Chem/Bio	Equipped with Emergency Response Guidebook, NIOSH pocket guidebook, and discipline-related references.		
Frequency with which Emergency Response Plan is reviewed	Plans Review	Same as Type II	Same as Type III	No less than every 12 months		
Frequency with which pre-planned hazards and targets are reviewed and updated	Plans Review	Same as Type II	Same as Type III	No less than every 12 months		

Activity: ***Develop and Maintain Training and Exercise Programs***

Critical Tasks
Develop and implement training related to detection and reporting of hazardous material
Provide appropriate hazmat response training to field staff and managers of State/local programs having involvement in hazmat response
Develop and implement exercise programs for WMD/hazardous materials response and decontamination

Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**
Percent of police, fire, EMS , first responders (other than those assigned to hazmat responses) that are trained to hazmat *awareness* level.	Training	No less than 100%	No less than 100%	No less than 100%		

Percent of first responders assigned to hazmat operations that are trained to hazmat *operations* level (in accordance with 1910.120 (g) or NFPA 472).	Training	No less than 100%	No less than 100%	No less than 100%		
Percent of personnel assigned to hazmat technician responsibilities who are trained to the hazmat *technician* level (in accordance with 1910.120 (g) or NFPA 472).	Training	No less than 100%	No less than 100%	All personnel must be trained to the minimum response standards in accordance with the most current editions of NFPA Standard # 471, "Recommended Practice for Responding to Hazardous Materials Incidents," NFPA Standard # 472, "Standard for Professional Competence of Responders to Hazardous Materials Incidents," and NFPA Standard # 473, "Standard for Competencies for EMS Personnel Responding to Hazardous Materials Incidents," as is appropriate for the specific team type		
Percent of personnel assigned to hazmat specialist responsibilities who are trained to the hazmat *specialist* level (in accordance with 1910.120 (g) or NFPA 472).	Training	No less than 100%	No less than 100%			
Percent of personnel assigned to manage hazmat who are trained to hazmat *management* level (in accordance with 1910.120 (g), NFPA 471 and NFPA 472) for detection equipment, including flammability, toxicity, radiations, chemical warfare agents (CWAs) and biologicals.	Training	No less than 100%	No less than 100%			
Percent of personnel assigned to manage hazmat who are trained to hazmat management level (in accordance with 1910.120 (g), NFPA 471 and NFPA 472) for substance identification equipment, for bases and vapors, liquids, solids and biologicals (white powder).	Training	No less than 100%	No less than 100%			
Hazmat personnel are equipped and trained for weather prediction and hazard pluming	Training	No less than 100%	No less than 100%	No less than 100%		
Jurisdiction's hazmat team(s) trains regularly with EMS to ensure proper coordination of victim care post-decontamination (identification of substance, administration of antidotes, etc.)	Training	No less than 100%	No less than 100%	No less than 100%		

Jurisdiction's hazmat team(s) trains regularly with law enforcement to ensure proper coordination for evidence collection and crime scene control	Training	No less than 100%. Same as Type II plus: (WMD Chem/Bio) Capable of providing decontamination for known and unknown contaminants and WMD Chem/Bio's	No less than 100%. Same as Type III plus: (Unknown Contaminants) Capable of providing decontamination for known and unknown contaminants.	No less than 100%. (Known Contaminants Based on Local Risk Assessment) Must be self-sufficient to provide decontamination for members of their team. Capable of providing decontamination for known contaminants.		

Activity: *Direct WMD and Hazardous Material Response and Decontamination Tactical Operations.* Definition: In response to notification of WMD/hazmat event or contamination, provide management and coordination of hazmat response and decontamination.
Critical Tasks
Receive alert/activation order for WMD and Hazardous Materials Response and Decontamination
Establish and implement on-scene management for hazmat material response
Provide a hazmat technical expertise team for emergency operations for both industry and public
Implement a hazmat response (e.g., implement plans, programs, agreements, and requirements)
Coordinate technical, administrative support, personnel, facilities, communications, and information
Provide required Personal Protection Equipment to WMD/hazmat responders in coordination with safety officer
Develop a site safety plan
Observe the scene and review/evaluate hazard and response information as it pertains to the safety of all persons on the scene and responding
Coordinate with safety officer to ensure the safety of on-scene WMD/hazmat responders
Coordinate and support decontamination activities on-site
Coordinate with and provide technical guidance to entities performing off-site decontamination
Coordinate with hospitals to develop plans for managing/decontaminating self-presenting contaminated victims
Coordinate resource management of hazmat equipment, supplies, and personnel
Request decontamination technical assistance resources
Coordinate with safety officer to brief hazmat branch/group personnel on-site-specific occupational safety and health issues involving hazmat/WMD releases
Issue instructions for self-decontamination, where appropriate, expedient and possible

Preparedness Measures	Component	Type I	Type II	Type III	Indicate Type	If not Type I, II or III list what you need to be Typed
Number of loss-time injuries (per deployment) of WMD/hazmat Response and Decontamination personnel during rescue efforts.	Safety	< 1 hr.	< 1 hr.	< 1 hr.		
Time in which tactical plan is developed, based on the incident action plan (IAP), and for implementation by the State, region, and/or local WMD/hazmat Response and Decontamination	Safety	Within 2 hours from arrival on scene	Within 2 hours from arrival on scene	Within 2 hours from arrival on scene		

Activity: ***Activate WMD and Hazardous Material Response and Decontamination.*** **Definition: In response to activation, mobilize and arrive at the incident scene to begin operations.**

Critical Tasks
Initiate WMD/hazmat procedures
Assemble personnel and equipment at designated location
Transport team (personnel and equipment) to scene
Conduct initial approach and positioning of responders
Initiate initial public protective actions (PPA)

Preparedness Measures	Component	Type I	Type II	Type III	Indicate Type	If not Type I, II or III list what you need to be Typed
Implement/integrate WMD/hazmat resources into ICS organization	Team Integration	Immediately upon arrival	Immediately upon arrival	Immediately upon arrival		
Team is coordinated/incorporated into ICS upon arrival	Team Integration	Immediately upon arrival	Immediately upon arrival	Immediately upon arrival		
Time in which initial hazmat size-up is completed	Team Integration	Within 30 minutes from notification of incident	Within 30 minutes from notification of incident	Within 30 minutes from notification of incident		
Time in which regional assets (e.g., Type I hazmat Team or Type III or IV Incident Management team) arrive on scene, if requested by IC	Team Integration	Within 2 hours from asset request	Within 2 hours from asset request	Within 2 hours from asset request		

Activity: *Identify the Hazard*. Definition: Upon arriving on scene, begin to assess site, sample, identify, and characterize WMD/hazmat and contamination situation, conduct hazard analysis to determine potential consequence and risk, develop plans for safety and hazmat/decontamination operations, and set up hazmat zones.
Critical Tasks
Notify law enforcement for guidance on collection and management of evidence from potential crime scenes
Initiate hazmat response
Survey the incident scene
Identify hazmat and the extent/scope of the incident
Analyze weather forecast to conduct hazard zone prediction
Conduct contamination surveys
Assess hazmat release situation
Conduct oil and hazmat assessment
Monitor movement of hazardous releases and formulate predictions on dispersion and characteristics over time
Characterize consequences and risk
Identify and establish perimeter and hazmat zones (hot, warm, cold)
Conduct ongoing assessments and predictions

Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**
WMD/HazMat plans address substance identification equipment (e.g. bases, vapors, liquids, solids, biologicals like white powder).	Sampling: Capturing, Labeling, Evidence Collection	Same as Type II plus: (WMD Chem/Bio) Special resources may be required for air sample collection	Same as Type III plus: (Unknown Industrial Chemicals) Known and unknown industrial chemicals standard evidence collection protocols. Ability to sample liquid and solids	(Known Industrial Chemicals) Known industrial chemicals standard evidence collection protocols required for each include capturing and collection, containerizing and proper labeling, and preparation for transportation and distribution, including standard environmental sampling procedures for lab analysis. Consistent with established chain of custody protocols		

WMD/HazMat plans address substance identification equipment (e.g. radiological substances)	Radiation Monitoring/Detection	Same as Type II plus: Identify and establish the exclusion zones after contamination spread (this does include identification of some, but not all, radionuclides). Ability to conduct environmental and personnel survey. Ensure all members of survey teams are equipped with accumulative self-reading instruments (dosimeters)	Same as Type III plus: (Alpha Detection) Basic criteria include detection and survey capabilities for alpha, beta, and gamma	(Beta Detection; Gamma Detection) The ability to accurately interpret readings from the radiation-detection devices and conduct geographical survey search of suspected radiological source or contamination spread. Basic criteria include detection and survey capabilities for beta and gamma		
WMD/HazMat plans address substance identification equipment (e.g. bases, vapors)	Air Monitoring	Same as Type II plus: (WMD Chem/Bio Aerosol Vapor and Gas) Advanced detection and monitoring includes WMD Chem/Bio detection Instruments	Same as Type III plus: The use of advanced detection equipment to detect the presence of known or unknown gases or vapors. Advanced detection and monitoring may incorporate more sophisticated instruments that differentiate between two or more flammable vapors, and may directly identify by name a specific flammable or toxic vapor	(Basic Confined Space Monitoring; Specific Known Gas Monitoring) The use of devices to detect the presence of known gases or vapors. The basics begin with ability to provide standard confined space readings (oxygen deficiency percentage, flammable atmosphere Lower Explosive Limit [LEL], carbon monoxide, and hydrogen sulfide)		

WMD/HazMat plans address substance identification equipment (e.g. radiological substances)	Field Testing	Same as Type II plus: Known or Suspect Weapons of Mass Destruction Chemical/Biological Substances [WMD Chem/Bio]	Same as Type III plus: Unknown Chemicals	Known Chemicals The presumptive testing and identification of chemical substances using a variety of sources to be able to identify associated chemical and physical properties. Sources may include printed and electronic reference resources, safety data sheets, field testing kits, specific chemical testing kits, chemical testing strips, data derived from detection devices, and air-monitoring sources		
Time in which area is isolated and public access is controlled	Site Control	Within 15 minutes from arrival on scene	Within 15 minutes from arrival on scene	Within 15 minutes from arrival on scene		
Time in which hazardous materials or category involved are identified	Site Control	Within 30 minutes from arrival on scene	Within 30 minutes from arrival on scene	Within 30 minutes from arrival on scene		

Activity: *Assess Hazard and Evaluate Risk.* Definition: Assess the hazards present, evaluate the level of risk to both responders and the public, and develop and Incident Action Plan (IAP) to address the response problem.
Critical Tasks
Collect, prioritize, and manage data and information from all sources
Develop incident monitoring and sampling strategy based upon a realistic assessment of operational hazards
Conduct sampling operations
Identify, classify, and verify suspected non-biological WMD/hazmat samples through the use of at least two (preferably three) different instrument technologies
Use plume dispersion models and other analytical tools to generate ongoing WMD/hazmat dispersion assessments
Implement risk evaluation process that adequately addresses the risk of various actions to both responders and the public
Develop and implement an Incident Action Plan (IAP) specific to WMD/hazmat issues based upon the risk evaluation process
Establish and identify visually an isolation perimeter (outer perimeter) to isolate the area and deny entry

Establish a hot zone (inner perimeter) to identify high hazard area(s) where responders will operate						
Establish other hazard control zones, based upon scope and nature of the event						
Make offensive or defensive reconnaissance operations, as necessary, to gather intelligence on the situation						
Conduct ongoing assessments and predictions						
Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**
Time in which preliminary estimate of number of victims exposed to toxic/hazardous material and source identification is obtained	Size Up	Within 1 hour from arrival on scene	Within 1.5 hours from arrival on scene	Within 2 hours from arrival on scene		
Time in which the at-risk population is identified and protective action recommendations are made	Size Up	Within 1 hour from arrival on scene	Within 1 hour from arrival on scene	Within 1 hour from arrival on scene		
Time in which the WMD/hazmat elements of the overall IAP are developed	Size Up	Within 1 hour from arrival on scene	Within 1 hour from arrival on scene	Within 1 hour from arrival on scene		
Activity: *Conduct Rescue Operations.* Definition: Once on-scene and equipped with protective and response equipment, implement rescue operations.						
Critical Tasks						
Determine the nature and priority of rescue operations and the numbers involved						
Identify personnel and equipment requirements to initiate rescue operations						
Implement safe and effective tactics to accomplish rescue operation objectives						
Extricate and rescue victims within the hot zone						
Coordinate rescue efforts with law enforcement to ensure safety of rescuers						
Implement secondary public protective actions (PPAs)						
Identify personnel and equipment requirements to initiate product/agent control operations						
Implement safe and effective tactics to accomplish product/agent control objectives						
Implement safe and effective tactics to support product/agent control objectives						
Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**

WMD/HazMat plans address PPE requirements. (e.g. respiratory protection, suits, boots, gloves. Complete ensembles required for the substance whether it is a solid, liquid, gas, WMD) This does *not* include explosive substances	PPE	Same as Type II plus: (Weapons of Mass Destruction (WMD) Vapor-Protective CPC; WMD Liquid Splash-Protective CPC) Levels of CPC vapor protection are: Vapor-Protective, Flash Fire Protective option for Vapor-Protective, and Chemical/Biological-Protective option for Vapor-Protective, all of which must be compliant with National Fire Protection Association (NFPA) Standard # 1991, "Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies" current edition.	Same as Type III plus: (Vapor-Protective CPC; Flash Fire Vapor-Protective CPC) Levels of CPC vapor protection are: Vapor-Protective, and Flash Fire Protective option for Vapor-Protective both of which must be compliant with NFPA Standard # 1991, "Standard on Vapor-Protective Ensembles for Hazardous Materials Emergencies," current edition.	(Liquid Splash-Protective CPC) Chemical Protective Clothing (CPC), which includes complete ensembles (suit, boots, gloves) and may incorporate various configurations (encapsulating, non-encapsulating, jumpsuit, multi-piece) depending upon the level of protection needed. Level of CPC liquid protection is: Liquid Splash-Protective, which must be compliant with NFPA Standard # 1992, "Standard on Liquid Splash-Protective Ensembles and Clothing for Hazardous Materials Emergencies," current edition		
WMD/HazMat Team shall have sufficient communication s so that any person donning CPC shall have their own radio. In addition, the hazard sector officer, hazmat safety officer and team leader shall be on the same dedicated channel.	Communications	Same as Type II plus: (Secure Communications)	Same as Type III plus: (Wireless Data)	(In-Suit; Wireless Voice) Personnel utilizing CPC shall be able to communicate appropriately and safely with one another and their team leaders		
Time in which contaminated victims are rescued from contaminated area	Rescue	Within 1 hours from arrival on scene	Within 1.5 hours from arrival on scene	Within 2 hours from arrival on scene		

Hazmat personnel are equipped and trained to perform product control and containment	Equipment	Same as Type II plus: (WMD Chem/Bio Agent Confinement) Advanced capabilities should include ability to intervene and confine incidents involving WMD Chem/Bio substances	Same as Type III plus: (Liquid Leak Intervention; Neutralization; Plugging; Patching; Vapor Leak Intervention) Chemical means such as neutralization and encapsulation of known and unknown chemicals. Mechanical means include specially designed kits for controlling leaks in rail car dome assemblies and pressurized containers, to pneumatic and standard patching systems	(Diking; Damming; Absorption) Employment of mechanical means of intervention and control such as plugging, patching, off-loading, and tank stabilization Environmental means such as absorption, dams, dikes, and booms		
Hazmat personnel are equipped and trained to perform product control and containment	Equipment Special Capabilities	Same as Type II plus: (Digital Imaging Documentation Capability)	Same as Type III plus: (Heat Sensing Capability; Light Amplification Capability)	(Gloves and Other Specialized Equipment Based on Local Risk Assessment) Additional resources that augment the capabilities of the team		
WMD/HazMat Team shall consist of no less than the listed number of personnel per entry. This staffing level does ***NOT*** include the HazMat Group Team Leader, Safety Officer or other necessary support personnel. i.e. donning/doffing and equipment support	Staffing	6 Personnel	6 Personnel	6 Personnel		
WMD/HazMat Team shall be able to perform no less than the stated entries. Ideally said team should be able to support 6 entries per-24 hour period	Sustainability	Same as Type II	Same as Type III	Capability to Perform Three (3) Entries in a 24-hour Period		
Activity: *Conduct Mitigation Activities.* Definition: Once on scene and equipped with protective and response equipment, implement operations plan to minimize contamination.						
Critical Tasks						

Identify appropriate PPE based on suspected hazardous material						
Coordinate with safety officer to monitor responders for exposure to hazmat						
Coordinate with safety officer to monitor and control the operating time of rescuers assigned to the hot zone to minimize rescuer exposure						
Secure the contamination source and affected areas						
Monitor and track compliance with containment requirements						
Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**
Time in which implementation of initial action plan andobjectives is initiated	Intervention	Within 4 hours from arrival on scene.	Within 4 hours from arrival on scene.	Within 4 hours from arrival on scene.		
Time in which hazmat/WMD contamination is contained	Intervention	Within 12 hours from arrival on scene.	Within 12 hours from arrival on scene.	Within 12 hours from arrival on scene.		
Activity: *Conduct Decontamination and Clean-up /Recovery Operations.* Definition: Upon arrival on scene and with the requisite equipment, initiate response operations to reduce the level of on-scene contamination, minimize the potential for secondary contamination beyond the incident scene, and ensure an effective transition to clean-up and recovery operations.						
Critical Tasks						
Identify assets required for decontamination activities						
Identify the type of contaminants, nature of response operations, and the required type/level of decontamination operations						
Provide a means to allow medical treatment facilities and shelter managers to readily identify people who have received gross decontamination						
Establish decontamination sites for victims						
Screen affected persons						
Implement emergency decontamination operations						
Decontaminate victims exposed to chemical, biological, radiological, nuclear, or explosive (CBRNE) materials						
Implement technical decontamination operations for injured, contaminated victims						
Implement technical decontamination of human remains						
Implement technical decontamination operations in support of WMD/hazmat entry and response activities Implement decontamination operations to address incident-specific scenarios and requirements						
Decontaminate pets, if resources are available						
Coordinate livestock decontamination						
Monitor clean areas within the contamination control line						
Monitor the exit points for hazmat contaminate movement outside the isolation zone						

Coordinate with environmental authorities to ensure the appropriate decontamination area clean-up and disposal of waste materials
Decontaminate affected facilities and equipment used for technical decontamination
Perform clean-up operations

Preparedness Measures	Component	Type I	Type II	Type III	Indicate Type	If not Type I, II or III list what you need to be Typed
Victims are provided maximum amount of privacy within site and situational constraints	Decontamination	100%	100%	100%		
Percent of victims provided clothing, blankets, and protection from the elements as needed	Decontamination	100%	100%	100%		
Time in which technical decontamination of first responders on-site is performed (depending on substance)	Decontamination	Within 2 hours from end of work period	Within 2 hours from end of work period	Within 2 hours from end of work period		
Time in which technical decontamination of off-site victims (e.g., at hospitals and designated decontamination stations) is performed (depending on substance)	Decontamination	Within 2 hours from arrival	Within 2 hours from arrival	Within 2 hours from arrival		
Time in which technical decontamination of household pets off-site (e.g., at designated decontamination stations) is performed (depending on substance)	Decontamination	Within 2 hours from arrival	Within 2 hours from arrival	Within 2 hours from arrival		
Time in which technical decontamination of human remains is performed	Decontamination	Within 24 hours from end of work period	Within 24 hours from end of work period	Within 24 hours from end of work period		
Time in which technical decontamination of facilities and equipment is performed	Decontamination	Within 24 hours from end of work period	Within 24 hours from end of work period	Within 24 hours from end of work period		
Hazmat personnel are equipped and trained to decontaminate members of their team.	Decontamination	Same as Type II plus: (WMD Chem/Bio) Capable of providing decontamination for known and unknown contaminants and WMD Chem/Bio.	Same as Type III plus: (Unknown Contaminants) Capable of providing decontamination for known and unknown contaminants.	(Known Contaminants Based on Local Risk Assessment) Must be self-sufficient to provide decontamination for members of their team. Capable of providing decontamination for known contaminants.		

Activity: *Demobilize WMD and Hazmat Response and Decontamination.* Definition: Upon completion of response phase transition to recovery operations, inventory equipment, complete paperwork, pursue rehabilitation, and conduct post-event analysis (e.g., lessons learned) in accordance with incident demobilization plan.
Critical Tasks
Transfer command for emergency response phase to authority having jurisdiction (AHJ) for post-emergency clean-up and recovery operations
Work through IC/UC to ensure that incident-specific evidence collection and investigation protocols are clearly understood and communicated to all responders
Inventory WMD/hazmat equipment cache and restore to service
Demobilize WMD/hazmat base of operations
Arrange transportation for demobilized WMD/hazmat personnel and equipment
Implement a formal post-incident analysis process (based upon local procedures)
Debrief WMD/hazmat capability personnel
Conduct and incident critique for incident responders

Preparedness Measures	**Component**	**Type I**	**Type II**	**Type III**	**Indicate Type**	**If not Type I, II or III list what you need to be Typed**
Time in which equipment cache is re-inventoried and packaged for transport	Demobilization	Within 12 hours from start of demobilization process	Within 12 hours from start of demobilization process	Within 12 hours from start of demobilization process		
Time in which base of operations is returned to original conditions	Demobilization	Within 12 hours from start of demobilization process	Within 12 hours from start of demobilization process	Within 12 hours from start of demobilization process		
Percent of WMD/hazmat Response and Decontamination task force debriefed	Demobilization	100%	100%	100%		